

American Cinematographer

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MAGAZINE

June 1930
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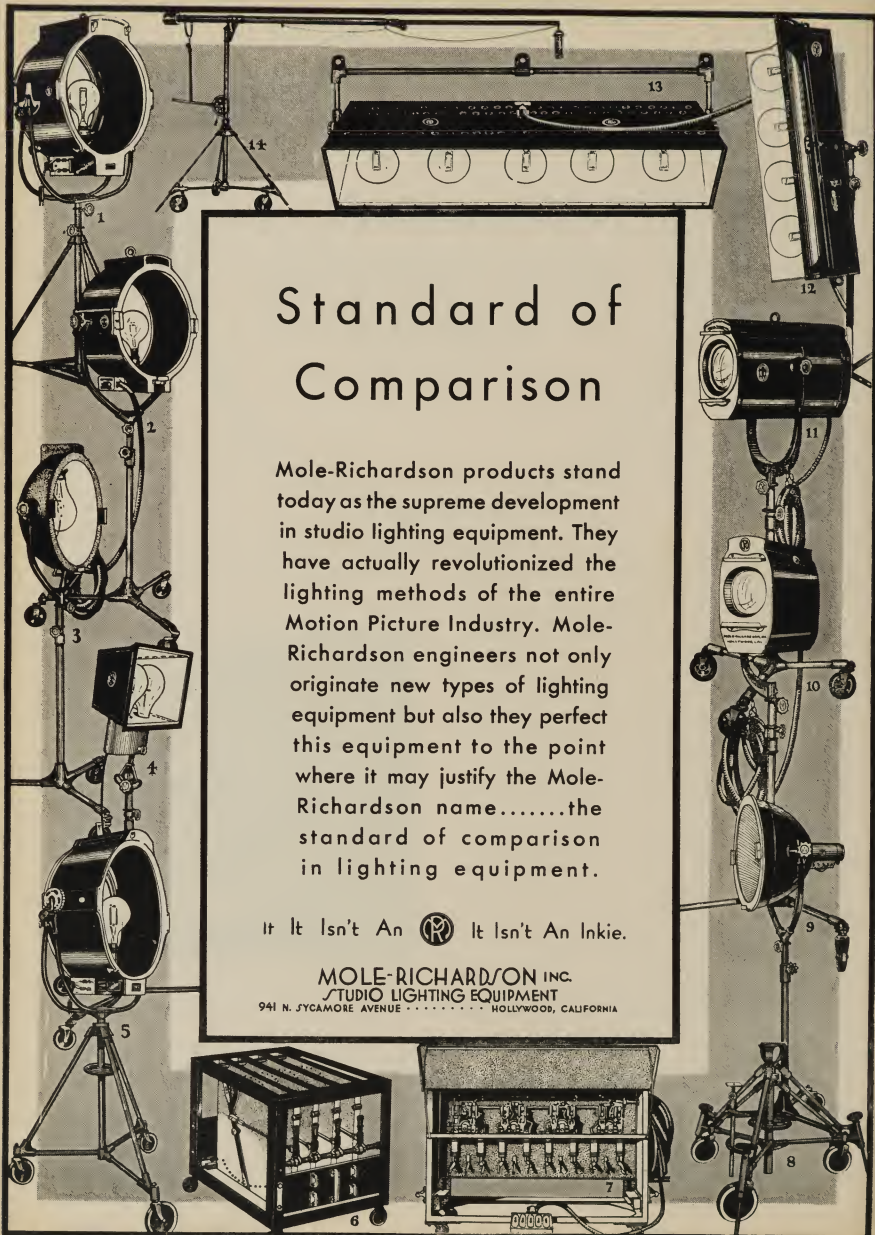
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Vol. XI

CONTENTS

No. 2

	Page
SHOOTING AN ECLIPSE, <i>by Lyle Abbott</i>	9
THE NEW WARNER BROS.' LIGHTWEIGHT CAMERA BLIMP, <i>by Hal Mohr, A. S. C.</i>	10
A NEW BLIMP FROM PATHE, <i>by William Stull, A. S. C.</i>	11
SPRING MEETING OF S. M. P. E. HELD IN WASHINGTON, D. C., <i>by Will Whitmore</i>	13
TENDENCIES IN THE CINEMA, <i>by Harry Allen Potamkin</i>	14
ASSOCIATE MEMBERSHIP DEPARTMENT CREATED BY A. S. C.	15
AS THE EDITOR SEES IT.....	16
SOME TALKIE OBSERVATIONS, <i>by Hal Hall</i>	19
PROGRESS IN THE INDUSTRY.....	20
AMATEUR MOVIE MAKING, <i>by William Stull, A. S. C.</i>	28
MOTION PICTURE PHOTOMICROGRAPHY, <i>by Herbert C. McKay</i>	31
PROFESSIONAL AMATEURS, <i>by William Stull, A. S. C.</i>	32
RUSHES, <i>by A. Kinney Griffith</i>	37

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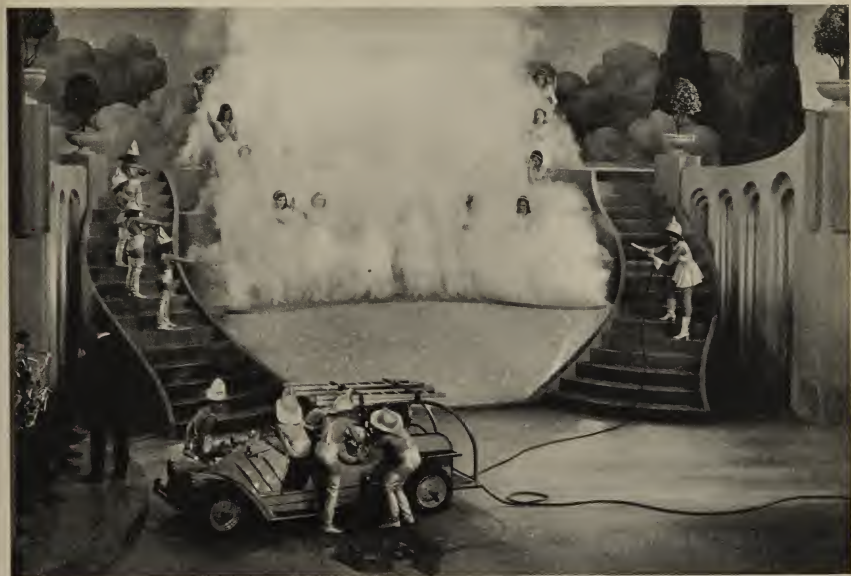
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SHOOTING AN ECLIPSE

A. S. C. Man Wins Scientist's Praise

By Lyle Abbott

THE trained cinematographer has exactly the kind of nerves and eyes that an astronomer needs. That was the conclusion we reached when we put American Society of Cinematography experts to work alongside of the most highly skilled astronomers at the Mt. Wilson observatory eclipse camp at Honey Lake, Cal., on April 28 and saw them capture the sun's eclipse in spite of clouds and cold weather.

The society was called upon for its technical skill, when it was decided recently that the cinematographer had a proper place in the highest scientific work.

The cameras that "shoot" entertainment in Hollywood studios are now an admitted part of the intricate equipment of many sciences.

But it takes man-power to make any camera do its part in adding to the world's store of scientific knowledge.

At the same time, the cinematographers enjoyed the celestial show and learned a few tricks from the astronomers.

The A.S.C. man in charge of the photography of the sun eclipse was Charles G. Clarke, one of the pioneer members of the society. He was "loaned" to the astronomical project by the Fox Film Corporation.

Daniel Bryan Clark, former president of the American Society of Cinematographers worked hard on the eclipse plan, and was largely responsible for the co-operation so freely extended by the camera technicians.

The eclipse camp was commanded by Dr. Seth B. Nicholson, one of the world's leading astronomers.

Dr. Nicholson now has at Mt. Wilson, the film which depicts the faint shadowy light waves which accompany all solar eclipses due to causes which

science never has learned. From these observations, it is believed a cause can be assigned to the shadow-bands.

Astronomers, always curious to know the "why and wherefore" have been puzzled to know whether the shadow bands are due to disturbances in the air, to irregular light from the moon, or to the great surging storms that rage on the surface of the sun, 93,000,000 miles away.

The equipment for the shadow-band study consisted of a screen of specially treated glass, 6 by 8 feet, and raised on 20-foot poles so that the light of the eclipsing sun fell squarely upon it.

Beneath this screen, Clarke set up his camera and began recording the phenomenon 5 minutes before totality.

The film carried on its sound track the accurate timing of the eclipse because that sound track caught the voice of Dr. Edison Pettit, astronomer, calling out the seconds as the scientists worked their telescopes and cameras.

In addition to the purely scientific record of the eclipse, Hearst-Fox movie-tone cameramen recorded the pictorial activities of the eclipse camp for the news releases.

"The material obtained by the American Society of Cinematographers for us is truly remarkable," Dr. Nicholson commented after receiving the prints.

"We have long been aware of the great usefulness of the motion picture camera, and the many varieties of sensitive film at the command of the film studios, but this demonstrates the use, also, of skilled technicians of the camera craft.

"I am confident that at the eclipse of the sun visible in New England states in 1932, we shall have progressed to the

(Continued on page 44)



Top, Charles Clarke photographing the eclipse. Below, Clarke and group who "shot" eclipse.

THE NEW WARNER BROS. LIGHTWEIGHT CAMERA BLIMP

By Hal Mohr

President, The American Society of Cinematographers

EVER since the success of the first Vitaphone films started the rush toward talking pictures, cinematographers have been learning all sorts of new things about their works and about the machinery they work with. One of the first things they learned was that their cameras, which they had always considered remarkably quiet, were far too noisy to suit their new colleague, the exacting 'Mike.' In other words, the pleasantly satisfying purr of a smooth-running Bell & Howell or Mitchell recorded even more strongly than the dialogue of the actors. Naturally, this couldn't be allowed, so both camera and cameraman were promptly locked up in a large, sound-proof chest, officially termed a camera booth. These booths were quite successful in insulating the noise, but they also insulated the cameraman from his colleagues on the set, and, as their ventilation was none of the best, they forced their unfortunate inmates to work under almost unbelievably bad conditions.

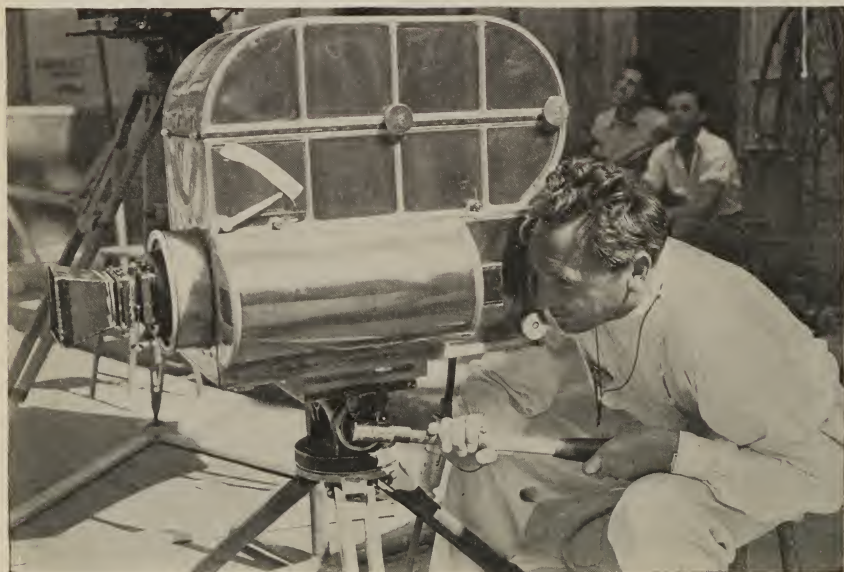
But this element of physical comfort was only one of the lesser evils. Any cinematographer will endure physical discomfort cheerfully enough, if he knows that he is getting worthwhile pictorial results. But the booths prevented his getting the best results. Once locked up in his booth, the cameraman was out of touch with his colleagues and with the action he was photographing. There could be no last-minute instructions from the director or from the director of cinematography, nor could he have any last-minute communication with them. But still more important were the restrictions imposed by the unwieldy size and

weight of the booths. They were so big and clumsy that moving them only a few inches necessitated real labor on the part of a large crew of 'grips': obviously they could not be used for the moving-camera shots which are so vital a part of modern screen technique; once in place, their half-ton or so of dead weight saw to it that they stayed so until a small army of men could noisily tug them somewhere else. Furthermore, they were so bulky that the three or four booths necessary to house the many cameras generally used in photographing Vitaphone scenes filled up practically all of the available floor space around the set, making the normal placing of the floor lighting units a difficult matter.

Such a state of affair simply could not be allowed to last. Almost immediately the various interested agencies, in and out of the studios, started experimentation along two separate lines of endeavor, both of which sought to banish the booth.

The first of these was the creation of a truly silent camera, which would no longer need any sound-proof insulation whatsoever. This is proving a difficult task, as is attested by the fact that, while tremendous strides have been made, no camera silent enough to be used un-insulated under all circumstances, has yet been made. But while the task is difficult, it is not by any means impossible; the present lack of complete success only indicates that such a tremendous problem requires more time for complete solution. With so many expert engineers working on it, it is very probable that it will be fully solved within the present year.

(Continued on page 22)



Hal Mohr using the new Warner Brothers' "Blimp"

A NEW "BLIMP" FROM PATHE

By William Stull, A. S. C.

WHEN the special sub-committee of the Producers' and Technicians' Joint Committee of the Academy of Motion Picture Arts and Sciences turned in the final report of its investigation of the sound-insulating capacities of the various camera coverings used in the industry, it was announced that one of the highest ratings for efficiency had been given to the newly perfected "Blimp" used by the Pathe Studio.

This "Blimp" is the joint design of L. E. Clark, Technical Director of Sound for the Pathe Studio, and Farrell Redd, superintendent of Sound Maintenance for the same organization, while the construction of the device was supervised by Joseph Wright, who, before joining the Pathe shop force, had had many years of experience in the construction of sound-proofing devices for submarine and aerial telegraphy in the United States Navy.

The "Blimp" itself depends upon laminations of sheet metal and acoustic felt for its sound-absorbent qualities. Being thus inevitably of heavy construction, the "Blimp" has been made of such ample size as to give the cinematographer abundant room for access to all parts of the camera within. In appearance, the "Blimp" resembles a good-sized chest, neatly finished in black Fabrikoid, to eliminate the possibility of undesirable reflections from the set lights, etc., and fitted with a large, rectangular window in front.



Front view of New Pathe "Blimp"

The entire left-hand side is hinged so that it drops completely down, giving perfect access to the camera, while the rear panel is removable, to facilitate focusing, etc. Large glazed ports are provided in these doors, so that when the camera is locked up, and in operation, it may still be observed. A similar port is placed on the right-hand side, so that the operation of the take-up mechanism can be checked at all times. Just below this port is the motor-switch, and an automatic, electric clutch, which stops the camera at the slightest indication of a buckle.

Inside, the camera is mounted on a completely insulated base, which prevents any sound or vibration from being transmitted from camera to blimp or tripod, or vice versa. Any camera may be used, and any type of motor. The arrangement of the camera's accessories—matte-box, finder, etc.—is not in the least changed for use in this "Blimp." The matte-box remains inside the "Blimp," fitted

directly to the camera's support, in the conventional manner. It may be adjusted quite as though no "Blimp" were being used. Access to it is gained through the unusually large, optical glass window through which the picture is photographed; this window is hinged to swing upward, where it is entirely out of the cinematographer's way, and leaves an opening approximately one by two feet in size, through which the filters, gauges, etc., may be freely reached for adjustment. The unusual size of this



Pathe's new "Blimps" in action on Pathe lot

window makes possible the use of extreme short-focus lenses, while its separation from the camera is such that lenses of a considerably longer focus than is usual may also be used without removing the matte-box, and without other inconvenience. The focus of the lenses is adjusted by means of a lever protruding through the bottom of the "Blimp," which operates against a scale upon which the settings for several lenses may be calibrated. The finder remains in its accustomed position beside the camera, and inside the "Blimp;" it uses the same large window that the photographing objective does, and it is easily observed through an ample porthole in the rear door of the case, which, being more than three inches in diameter, allows an unrestricted view of the finder at all times.

The framework of the "Blimp" is angle iron. On this is built up the sound-proofing shell, which consists of an outer layer of aluminum sheathing, a layer of acoustic felt, a layer of sheet lead, and a further layer of the acoustic felt. The joints around the openings are of course insulated with moulded sponge-rubber. This construction gives a remarkable degree of sound-absorption, having been measured by the Academy's engineers as better than 21 decibels. In actual practice, these "Blimps" are markedly superior in sound-absorption to the booths generally used. The writer recently stood between a conventional booth and one of these "Blimps" during the filming of a scene; although he could easily detect the noise of the camera working in the former, he was unable to detect any sound of the camera operating in the "Blimp."

Obviously, such a construction cannot but create a heavy "Blimp," for which the conventional wooden tripod would be entirely inadequate. Therefore, the Pathe engineers, working in close cooperation with the Mole-Richardson experts, have adapted the already famous M-R Rolling Tripod to the requirements of their device. As used in the Pathe Studio, this tripod is made in three progressively overlapping sizes, from a "baby" to one large enough to raise the camera well above the eye-level of normal people. As the tripod head is removable and interchangeable, the entire assembly may be quickly shifted from one to another of these bases, as may be necessary. Furthermore, a special "top-hat" has been evolved for use with the device, giving the new "Blimps" the same range of supports as was available with the lighter designs of former days. So perfectly balanced are these units, that despite the fact that the "Blimps" and camera weigh better than three hundred



Cross section of sound-proof material used in new "Blimp"

pounds, they may be handled with the same ease and freedom that characterized the cameras of silent times. The pan-and-tilt movements may be operated by large, convenient cranks, or they may be disconnected, and used as ordinary free-heads. For this latter use, the "Blimps" are fitted with two arms, one at the lower left-hand corner of the case, and one, inclined, at the upper right-hand corner. When used thus, the perfect balance of the units is attested by a facility of movement amazing in devices of such size and weight.

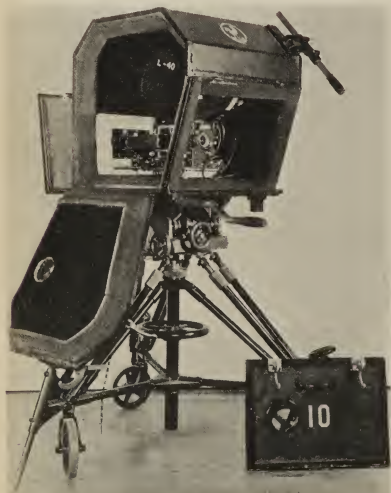
"Our earlier experiments," says Mr. Clark, "showed conclusively that if we wanted silence, we would have to pay for it in weight and bulk. So we adopted the present laminated construction, which has proven thoroughly satisfactory. Once that had been decided upon, we knew what to do to attain the ends desired by the Sound Department. The needs of the Camera Department were, to us, another matter. We didn't know just what they wanted. So we went to the men behind our cameras, and asked their views, and then tried to embody as many of them as possible in a design that would still satisfy the microphone. The reception given the final design certainly seems to indicate that the cameramen are pleased, for since the first 'Blimp' made its appearance on the lot, the shop has been crowded to the limit in order to satisfy the demand from the boys in the booths.

"An interesting feature of the evolution of the device is the fact that, from the time the appropriation for their construction was granted, to the appearance of the first one on a stage, but ten days elapsed. This period embraced both the design, construction, and testing of the 'Blimp.' In creating this design, Mr. Redd and I found that the greatest, and most interesting, problems lay not in the larger features of the design, but in the details. For instance, there was the matter of getting the proper clasps to close the doors. We surveyed the field very thoroughly, and could find none available which would be simple, quick-acting, and positive. So we shut ourselves up with our thoughts and a drawing-board, and finally evolved our design, which satisfactorily met all our requirements. It consists of a long, curved finger, operated by an eccentric cam arrangement, controlled by a short lever. Another little detail, which we are embodying in our latest models, is a set of clasps beneath the 'Blimp,' into which the 'grips' can slip a length of rope, and thus have an easy means of picking the thing up, like an old-fashioned sedan-chair, and moving it about the lot, or from tripod to tripod.

"But perhaps the most impressive thing connected with the evolution of this 'Blimp' is the wonderful cooperation between the camera and sound staffs, which enabled us to build a device which is so satisfactory to both. It is significant of the new spirit of the industry, which, in its larger aspects, has been shown in the general cooperation which has made such achievements as the Academy's Sound School, and these latest equipment tests possible. Let us hope that this is just a beginning, for with such a spirit of cooperation in the technical branches of the industry, we can rise to new heights, and solve our common problems faster and better than ever before."

New Microphone Device Developed by Carl Dreher

A NEW device known as the RKO Beam microphone, so constructed that it brings sound to a focus for recording and yet keeps extraneous noises to a minimum, has been developed by Carl Dreher, engineer in charge of sound recording for RKO. It is operated by hypothetically casting a beam in which certain sounds are picked up to the exclusion of all other sounds not originating within the beam, and can be directed from behind the camera, thus keeping out of range of the lenses at all times.



View of new "Blimp," open showing interior

SPRING MEETING OF S. M. P. E. HELD IN WASHINGTON, D. C.

Delegates Received by President Hoover

By Will Whitmore

WITH more than 200 members and their wives present, the Spring Meeting of the Society of Motion Picture Engineers held at the Wardman Park Hotel, Washington, D. C., May 5-8 was the greatest of the 28 meetings held thus far in the history of the Society. It was a success from every standpoint, from the importance of the papers read, the banquet and other forms of entertainment, the showing of special motion pictures and the movietone addresses made by many of the leaders in the industry.

Of such interest and importance were the papers that long discussions followed practically every paper read, making it hard to keep up with the schedule and necessitating holding the last day's meeting until late in the afternoon.

Probably one of the outstanding features of the Convention was the banquet, at which 300 people were present. All speeches at the banquet were broadcast over the Columbia chain of 33 stations and from the many reports received after this broadcast it is known that it was received throughout the country with unusual interest. Mr. Will H. Hays was the principal speaker, with President Crabtree, C. Francis Jenkins and Master of Ceremonies, William P. Connerly, Jr., Congressman from the 7th District of Massachusetts, also contributing splendid addresses.

Another splendid attraction at the banquet was the addresses by sound film given by such leaders of the industry as Wm. de Mille, J. E. Otterson, David Sarnoff, George Eastman, Harold B. Franklin, Harley Clarke, Harry Warner, Peter Mole and others. These pictures were made especially for the banquet and to those present it seemed as though the speakers were actually present in flesh and blood. Here was a concrete example of a new way in which a sound film may be used, a product of the work of the very men who enjoyed it at the banquet.

On Wednesday afternoon the entire body boarded 10 large motor busses and went to the White House to meet President Hoover. Following this the group stopped at the Arlington Cemetery and then motored on to Mt. Vernon to visit the home of our first president. This sight seeing motor trip was one of the most enjoyable events of the meeting, although the extreme warm weather proved fatiguing to many.

While the members of the Society were earnestly in session each day wives and friends of the members were entertained by Mrs. Walter E. Prosser who acted as hostess to the women throughout the meeting. On Monday afternoon Mrs. Prosser held a charming bridge party for the women at the hotel.

(Continued on page 26)



J. I. CRABTREE



President Hoover greets S. M. P. E. members on White House lawn

TENDENCIES IN THE CINEMA

By Harry Allen Potamkin

SEVERAL positive tendencies are operating in the cinema: toward the compound, the reflective, and toward a new logic. The futile defense of the mute film evinces—or evinced, the defense being quite muted now—a failure to recognize the inevitable nature of the cinema as a form in evolution. Art has long been seeking to compound the simple. Twentieth century art records innumerable hybrids that could not survive nor propagate. The artists of Der Sturm, like Archipenko, sought to send the flat surface into space, sought, that is, to wed painting with sculpture. Dynamism was an attempt to add mobility to graphic and plastic. The theatre of Europe, echoing *outré-mer*, has—in its more adventurous milieus—been attempting to multiply itself, indeed, to cinematize itself. What is the Joycean method if not a desire for the compound? Lance Sieveking, writer, and Francis Bruguière, photographer, have endeavored to compound the photograph with the word. These are aspirations against the medium and toward another form, the cinema. The cinema was born in the age of the multiple. Years hence a Joyce will not think of attempting his compounds with words. He will go into the cinema, which unifies the verbal and the oral with the visual, and ultimately the spatial. Color and tones with music, speech and typography—planes with solids, framed areas with images floating in space.

The cinema is, by nature of its potential structure, a compound form. The Russians have established montage, the arrangement of the images into a progressive structure, as the method of cinema unity. Montage enables, by its principle of organized motion (rhythm), the mounting of the verbal legend (caption) and the utterance (audible speech) into the unit of the film, so that the motion-picture becomes the justification of its diverse utilities. Having found a method for the compound, the cinema establishes the compound out of the hybrid.

Basically the film is a progressive medium like music, literature, the theatre, the dance. Progressive mediums are performing mediums, as contrasted to painting and sculpture and architecture—shall we call these “frozen” mediums, intensive mediums? But within the progressive there is also the intensive. That is why the cinema has not negated the suggestions of painting and sculpture. “The Passion of Joan of Arc” is a beautiful instance of the structural presence of the graphic and the plastic in the cinematic. Having exploited the literal, muscular film to its ultimate—the Russian film has thus fulfilled the American—the seventh art finds it urgent, as Eisenstein has said, to utilize the “reflective processes.” A number of causes are at work toward this intellectualization of the film. First, the natural development out of the immediate impact film; second, the insistence of criticism in the subject-matter of the film (the Russian influence at the moment); third, the increased sensitivity of the physical medium (panchromatic negative, light, etc.); fourth, the need for intensification to consolidate the components of the compound.

The film is the most intensifying of mediums. It concentrates hours into moments more resolutely than does the theatre or the novel. It concentrates the image *boldly*, bringing forth every particle to the apprehension of the experienter. It can move facilely in space and back and forth in time with a minimum of burden. Intensification is physically the method of intensiveness. “The Passion of Joan of Arc” is the most intensive film yet realized, and every detail of it is a portion of and a contributant to that intensiveness. “Arsenal” is intensiveness expressed in the accumulation of forces in the stationary body. “The Old and the New” (The General Line) is intensiveness of this order cooled by Eisenstein’s objectivity. The *idea* of intensiveness is reflection. The Russians have tried heroically, in the past failing momentarily but now succeeding consistently, to convey this idea in the symbol, which is the intensification of an extensive reference in an object of immediate reality. The failure was due to the employment of this reflective instrument in a non-reflective structure, the culmination of the film’s first technique, the physical or American.

The establishment of a reflective structure is inevitable. The subject-matter of the Russian kino creates a form which will

support the critical intention. The cinema, save in the brief instance of the Swedish, has never before dared criticism. It has been dramatic, whimsical, lively, has achieved pathos and even, as in Feyder’s rendition of Zola’s “Thérèse Raquin,” tragedy, but tragedy without extensive reference. The Russian film is propelled by criticism, and that explains its vitality. There can be no propagating art without the impulse of criticism. There can be isolations, as in France; there can be the momentarily effective, as in America; but for a cinema permanently great, strong and productive there must be criticism. The conversion of this criticism, the social theme, into its form is art, cinema. Form is the conception constantly *informing* the structure. The Russian film alone moves toward a permanent form. It is not likely that the American film, far removed from whatever critical center there is in the United States, will approximate, for some time to come, more than a style or a manner. And not until there is a release of the fuller, suppressed social energies of our land will there be realized a cinema of which the movie, rudimentary art, hints. We are yet, too long so, in the era of the legend and the myth. We come no nearer to criticism, to art, than the symptom of the environment, and that environment at its lowest level of ideology and experience. I believe, however, that the years will bring them this change of production locale and the release of the social, meaning creative, energies.

The necessities of the critical subject-matter and the reflective processes have been evolving a new logic of cinema construction. The logic of film-construction is termed “continuity.” The very word suggests the matter-of-fact, arithmetic or geometric, literal sequence of the American film progression. Griffith created the “flash-back,” a diverting of the progression by means of a subtraction or fractional intrusion; but, since the American film, remaining muscular, literal and sentimental, could not see the structural significance of this device, it remained as merely a part of the practice of “cutting.” Russia, re-studying the film at its source, developed the Griffith technique and established montage as cinema construction. The flash-back has become a paramount instrument within montage. In “A Fragment of an Empire” it is the pivot of the rhythmic structure.

Beginning with this structural establishment of a device, the film could advance in its hunt for a language and get as far as the figure of the speech. The old logic of 1, 2, 3 or 2, 4, 8, the episode following episode like a child’s tale or an elementary melodrama, was broken up. It is being broken up constantly. In “Arsenal” we find the new logic having attained to a non-logic—if we think in terms of sensible verbal cogitation—by means of juxtaposition of images not immediately leading out of one another, but producing a total conveying idea and form, fluidity. Elsewhere films have been made in a logic of images freeing itself from the logic of words (from which so many writers are struggling to free themselves, only bewildering themselves the more), but the practices are, for the most part, either documentary (as in the composite newsreel “Berlin”), or effete fanciful, an *atelier* experiment, as in France. However, though there are not so vital or influential or motile and generative as the Russian work, they support the tendency of the cinema away from literalism, bluntness, the non-structural, the insensitive: contradictions of the intrinsic evolving cinema. The new logic relates historically to the earliest modifications of the literal in the “angle-shot” (a structural point of view), the multiple image and the impression of image upon image, and the magician’s virtuosity of George Melies in the ‘90s. But America, literal-minded, rudimentary-minded, which rejected these modifications of the literal or, as in the case of the angle, blundered with them, now accepts them in the new “virtuoso” film, the movie revue, as “stunts.” The structure of the film is far from the mind of Hollywood and will be as long as the mind of Hollywood is composed of the non-critical mentalities of America. Indeed, Hollywood is bewildered by the evidences of the cinema’s positive tendencies: toward the reflective, toward

(Continued on page 44)

ASSOCIATE MEMBERSHIP DEPARTMENT

CREATED BY A. S. C.

Emery Huse and Fred Gage First Members
Taken in New Branch

ONE of the most important moves in the history of the American Society of Cinematographers was made last month when the society established an Associate Membership branch which will enable it to place on its rolls the names of outstanding men who, while not actual cinematographers, are contributors of vital importance to the art.

This matter has been under discussion for the past year, but no definite action was taken until last month when the board of Governors acted on it and the society overwhelmingly voted in favor of such a membership branch. Those who become associate members will enjoy all the privileges of the Society except that they shall not vote, hold office, or share in the Society's assets or liabilities. Associate membership may be extended to those who while not active cinematographers, perform work essentially of a cinematographic nature and are not directly connected with the manufacture and sale of cinema apparatus.

The first two Associate members taken into the Society were Emery Huse of the Eastman Kodak Laboratories, Hollywood, and Fred Gage of Warner Brothers laboratories, Hollywood.

Another Active member was also accepted last month by the Society. He is Philip W. Chancellor, noted for his unusual work in photographing rare animals and plant life in various parts of the world. Mr. Chancellor heads the noted Chancellor-Stuart Expeditions which periodically journey to the far corners of the earth seeking scientific photographic records which have been turned over to the Field Museum, of Chicago. Mr. Chancellor has just completed the filming in the island of Flores of an almost extinct form of lizard. This film has not yet been turned over to the museum, but was shown in part to the A. S. C. members at a meeting on the evening of May 26. Mr. Chancellor is now completing arrangements for another scientific expedition to the South Seas which will keep him there for more than a year.

Organization plans for the present year were completed by the new President, Hal Mohr, during the past year. An extensive program has been planned and an active year is expected. The following committees were appointed by President Mohr:

Public Relations Committee, J. A. Dubray, Chicago; Georges Benoit, Paris; H. T. Cowling, Rochester, N. Y.; Claude McDonnell, London; John Dored, Riga; Harold Sintzenick, Bombay, India. No chairman was appointed. The President will direct the activities of this committee.

Research and Education Committee, John F. Seitz.

Membership Committee, Fred Jackman.

Production Committee, Daniel B. Clark.

Social and Entertainment Committee, John W. Boyle.

Program and Exhibition Committee, Al Gilks.

It will be noted that with the exception of the public relations committee, all the committees are one-man committees. President Mohr took this move because he feels that if one man has the responsibility of a particular job he will function more satisfactorily than would a group. It will be an interesting experiment.

The following Board of Editors to co-operate with the Editor of the *American Cinematographer*, was appointed: William Stull, H. T. Cowling and Ned Van Buren. Two of these members were on the board of the past year.

The first general meeting of the Society under the new administration was held at the Eastman Kodak Laboratories on Monday evening, May 26.

This meeting was a tremendous success. On the program were the following features: Dr. L. M. Dieterich, who is developing a new lens, gave a screen demonstration of the results obtained. Mr. Chancellor gave a screen showing of part of his latest scientific film taken on the Island of Flores. Len Roos,

another member, gave a demonstration of results obtained with his portable sound recording device which he has developed and which is being made and marketed by the Tanar Corporation of Hollywood. Mr. Zeno Klinker, a Los Angeles man whose hobby is assembling a complete motion picture history of the development of aviation, then showed 9000 feet of the most remarkable film ever put together. It was a history of aviation from the days of the Wright Brothers first experiments right to date, and included the record of the Graf Zeppelin's world flight and every aviation event of interest. More than fifty members were present and all acclaimed the meeting as one of the most interesting they have yet attended.

Plans are now under way for the disposal of the present club rooms and offices and for the acquiring during the coming year of a club house. More details regarding this move will be published in a later edition of the magazine.

Service for Tanar Corporation's Customers

PROVING that "Service" is more than a mere slogan on the part of the Tanar Corporation, Hollywood manufacturers of portable sound equipment, Len Roos, vice-president and general manager of this concern, hopped an airplane recently and journeyed to Tulsa, Oklahoma, when he received word that a customer was a bit puzzled over the workings of the equipment.

In a few hours after receiving the word, Roos was on the scene, much to the surprise of President Thomas J. Edgar, of the Mid-Continent Pictures Corporation, and in a few minutes had everything straightened out and was on his way back to Hollywood.

"We aim to give the best service in the United States," says Roos on his return. "No equipment is worth anything unless there is a personal service behind it. We will always give that service. You see, our customer in Tulsa didn't quite know how to hook up, so we showed him in person, and tried to save him all the time we could."

Roos, who is a member of the American Society of Cinematographers, for years was a globe-trotter cameraman. He came back to Hollywood when sound came in to find portable equipment to take with him. He couldn't find what he wanted, so devised it himself so successfully that he is now a manufacturer.

New Swiss Color

THE natural color film problem has been solved by a recent Swiss invention, states the Swiss Cinema, a trade magazine. "A color film produced according to the new process was recently demonstrated; the colors appear to be absolutely natural and give a greater impression of plastic than was ever produced by a black-and-white film. The new invention does not imply either technical or financial difficulties; it is merely a completion of the black-and-white film. Films produced according to this process can be projected over any ordinary apparatus and copied and developed along the usual lines. There are no moving color edges which are so dangerous in other existing color-film systems, and the color scale is extremely rich. Further advantages are: the complete interchangeability of color and black-and-white films, both in recording and reproducing, normal frequency of pictures at the recording; normal source of light during the projection; no difference of price, as compared with the black-and-white film. A Swiss color film is being produced now according to the new system."



As THE EDITOR SEES IT



Amen!

SOMEONE should present our good friend, Jack Alicoate, editor and publisher of *Film Daily*, with a nice gold medal, or some other suitable award, for his recent comment in his excellent paper on laughter in the movies. We think so well of it, and agree with him so fully that we give you his editorial in full. This writer has been squawking for a long while, maybe they'll listen to Jack.

"Take away the bare legs if you will," says Jack. "Discard the enticing and enthralling music. Throw out the million-dollar ensembles. Kill the greatest love scenes and thrills ever cinematized, but don't, please don't, we are pleading with you, Jim, please don't take away the laughs. What has happened to the laughs that should be coming from Hollywood probably nobody knows except the income tax collector. This much is certain: Eighty per cent of the so-called current crop of cinema comedians haven't enough punch to put a dent in a cup of jello, and their screen demeanor in quest of the elusive chuckle is, in most cases, as humorous as an embryonic acrobat trying to sing love ballads on amateur night.

"It surely cannot be that our highly paid and artistically inclined production executives have entirely and collectively lost their sense of humor. Most of them have been in the picture business too long for that. It surely is not the lack of human material of proven laugh-making ability, for Hollywood overflows with the best comedians the New York stage has to offer for, Oh, so many years. What is the trouble, then? In most recent big talker productions, and we could name a dozen off hand, the comedy has been a combination of manslaughter, mayhem and murder. And let us gently suggest to you, Mr. Producer, just at this point, the following thought: Ninety per cent of those who go to pictures go to be amused. They want and MUST have laughs.

"It might possibly be that the main difficulties lie in the proper or improper timing of laughs for this new electrical entertainment. It has been suggested that writers of original laugh material are scarce. This can hardly be true as Hollywood is full of them and there are not enough golf courses in Southern California to take care of all of them at one time. They can't all be away fishing. Perhaps the directors of our latest barker operas are respecting without a funny bone, but, ye gods, it cannot be that they would all go tragic and esthetic at one and the same time. Whatever the matter, we are hereby registering our squawk along with that of some 115,000,000 other Americans who believe in smiling and will gladly become a charter member of the 'Bring Back the Laughs' movement and hereby and to wit agree to do our bit for the cause by devoting time, stamps and marbles, if necessary."

Censors

THIS writer has always found it extremely difficult to figure out just why there has been so much censorship of motion pictures while stage plays have gone on and on to limits that really keep some of us away from the theatre.

We have yet to see a motion picture that contained anything that would contaminate us. On the vaudeville and legitimate stage we have listened to alleged jokes and smutty conversation that turned our hard-boiled cheeks crimson. Yet, aside from an occasional flutter of hot air from the lips of city fathers here and there, there has been but little done about it. However, the world and his wife seems to take it upon themselves to watch the industry that has been clean throughout the years. The stage has never done for civilization what the movies have done. Why, oh why, can't the world let pictures alone especially when those in power do as much as Will Hays and the producers are doing and always have done to keep pictures healthy?

"Hell's Angels"

HOWARD HUGHES, youthful producer, again has proven to the old-timers that he knows how to make real pictures. In "Hell's Angels" he has turned out a production that will go down in history as one of the most remarkable air pictures ever made. It is really difficult to visualize any picture of the future being more spectacular in the matter of aerial scenes. Hughes seems to have reached the limit of all aerial possibility.

For close to three years we have been hearing of "Hell's Angels." It has been made and remade, casts have been juggled and directors have come and gone. But Hughes had an idea, and finally he stepped in and did his own directing, and what a job he did! Of course, there are things that should not be. What picture hasn't? But Mr. Hughes deserves all the praise that is being showered upon him.

And one of the reasons this picture is so wonderful is because Mr. Hughes surrounded himself with competent cameramen. Those air scenes which lift you from your theatre seat were photographed by cameramen who were up there following on the tail of each ship, with camera ever trained on the action. Courting death daily, these cameramen never faltered. Under the direction of Gaetano Gaudio, A.S.C., in charge of the studio photography, and Harry Perry, A.S.C., in charge of the aerial photography, a force of thirty cinematographers gave their best—and the results speak for the quality of their work. Truly wonderful photography! All the critics have given unstinted praise to the cameramen in their reviews of this picture, for all realized the big part these men played in making it a success.

New Audiences

DIRECTOR William A. Seiter, one of the keenest men in the picture business speaks words of truth and wisdom when he says in an interview elsewhere in this magazine that the talkies have been the salvation of the picture business.

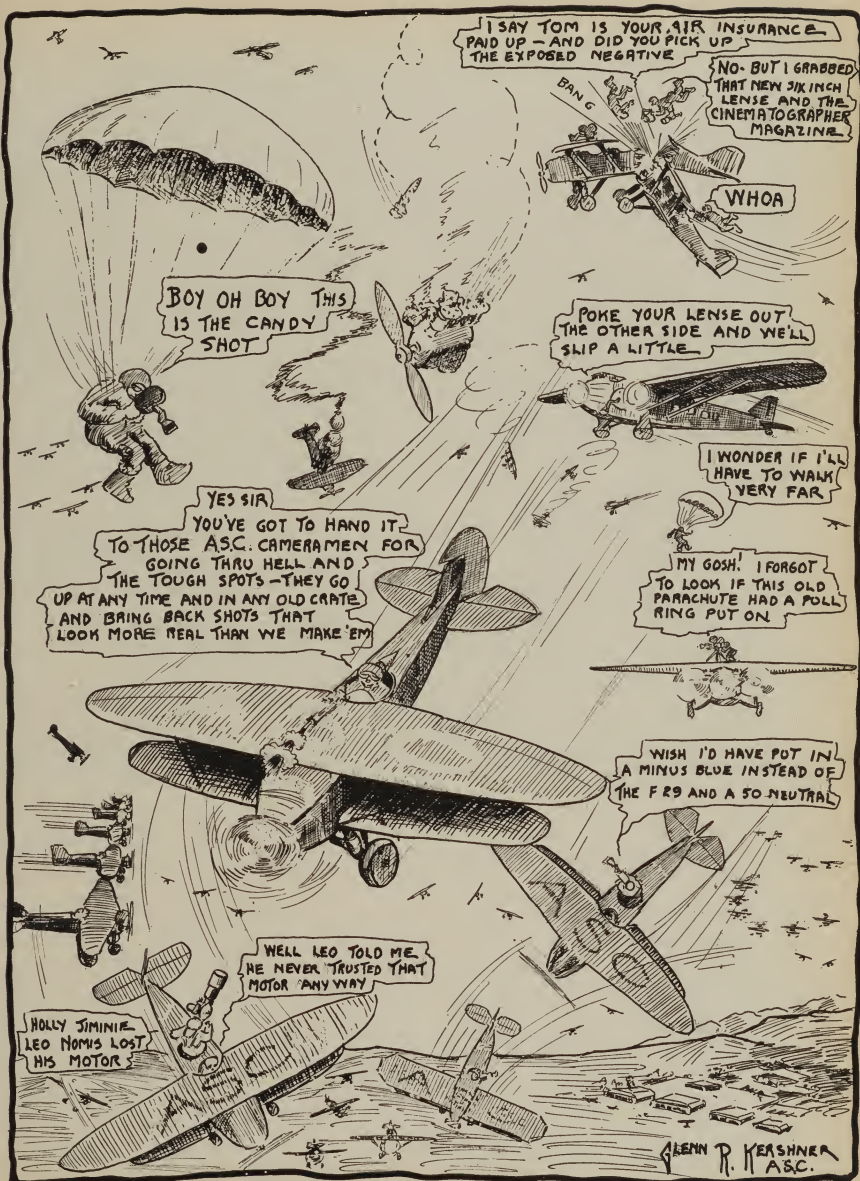
We all recall the rather gloomy days of the business just before Warner Brothers gave us the first Jolson picture which turned the picture business upside down. Theatre owners were going broke, audiences were dwindling, studios were having hard times, Hollywood was in the doldrums and the outlook was anything but pleasing to all. And then came the talkies and untold thousands of new picture patrons started flocking to the theatres. Today the business is healthy and the future is as rosy as a Spring morning.

Filmo Topics

BELL & HOWELL are deserving of congratulations for the excellent manner in which they are producing their monthly magazine, "Filmo Topics." The May number with its new "dress" is one of the most attractive little magazines that has come to these offices for some time. And it contains so much useful and entertaining information for the home movie maker! Mr. Stanley H. Twist and Mr. Edwin A. Reeve, Executive Editor and Editor, respectively, surely are doing much to assist the users of their equipment, and are doing it in a dignified and artistic manner.

Contributions

WE have been thinking of late that many of our readers must have had unusual experiences and adventures in their wanderings about with either standard or 16 millimeter cameras. These experiences make very entertaining reading. So right now, we invite all readers to become contributors to this journal, if they so desire. Perhaps you may have been forced by circumstances to devise some "makeshift" method of doing something in a far-off land. That experience might help another. So send along either suggestions, or articles. There is nothing so interesting or entertaining as human experiences.



"HELL'S ANGELS"

M-G-M'S NEWEST "BLIMP"



JOHN ARNOLD, A. S. C., head of the sound camera department of the Metro-Goldwyn-Mayer Studios, has brought out another type of camera "blimp," which is scoring a decided hit at those studios. This new device is pictured above with Arnold explaining the details to Lela Hyams. Miss Hyams is beside the new model, while Arnold is standing beside the earlier model that has been used for some time at the M-G-M lot. The new "blimp" is a solid aluminum casting, and is much more compact than the earlier model, yet offers much easier access to the camera within. Furthermore, the sound absorbing qualities are said to be considerably improved.

More Cameras for Technicolor Being Made by Mitchell

THE Mitchell Camera Company announces that their plant at present is working on an order for eighteen Technicolor cameras for the Technicolor Corporation. The first two of this order will be delivered this week.

Due to the widespread adoption of natural color for pictures the Technicolor Corporation has had to increase and expand its vast facilities in every way during the past year. A new Hollywood plant was added to the original one and many new cameras have been placed in use during the past year with the present order still in the making. The Mitchell Camera Corporation has manufactured all of the Technicolor cameras with the exception of the first experimental ones.

With the expansion of the Technicolor plant has come the development of one of the largest camera departments in Hollywood. This force of cameramen is headed by Edward T. Estabrook, who has been one of the Technicolor outstanding cinematographers for many years. He has long been a master at the use of color cameras.

Three Companies Merge

AS this issue goes to press the news comes from New York that Educational, Metropolitan and Christie companies have merged into one organization which will be headed by E. W. Hammons. Charles Christie is slated to be vice-president and business manager of the studios.

The new affiliation marks the return of the Christie brothers to the Educational banner after an absence of three years. Both the Educational and Metropolitan studios will contribute a considerable part of Educational's product for next season. These studios and the Mack Sennett plant are to produce the entire schedule of 64 two reel comedies for Educational's new line-up. The Metropolitan also will continue to rent space to companies for feature production.

Color for Newsreel

Paramount eventually will use color in its newsreel, according to Emanuel Cohen. The company now is experimenting with its own color process. Whether or not an all-color reel will be put on the market will be determined later.

SOME TALKIE OBSERVATIONS

William A. Seiter Gives Some Personal
Remarks Anent the New Entertainment

By Hal Hall

WE have with us this month on the cover of the *American Cinematographer* one of Hollywood's finest directors, one of her most estimable gentlemen, and above all, a man whose success has never gone to his head which is packed with scintillating gray matter—he is William A. Seiter, and he parks his directorial chair at First National Studios.

Interviewing Bill Seiter is a difficult job; a job that requires patience, for he spends his lunch hour planning the afternoon's work, and his plans are so well laid that there is scarcely a minute between scenes in which to engage him in the game of questions and answers. All of which is one very good reason why Hollywood producers like to have Seiter on their payroll. There is no waste motion with him. He knows what his story is all about; knows what he wants to do with it; rarely shoots anything that he does not use; and keeps everybody happy while he is doing it. Seiter is one of the rare directorial individuals who cuts his pictures as he is shooting them, so that when his final shot is made there is not so much for the cutting department to do, and very few faces left on the cutting room floor. If Seiter doesn't want a face in the picture he doesn't have it photographed, so there are no broken hearts when his pictures reach the screen.

Another outstanding quality of Seiter's is the fact that he is noted for his "No," rather than for his "Yes." No self-centered studio executive has ever had his ego increased by Seiter, which in itself is somewhat of a distinction in this town where so many jobs are held because of the holder's ability to say, "Yes, Sir."

Seiter is one of the greatest boosters of the talkies. He has been from the very start. At the time when practically everyone connected with the old silent pictures was bemoaning the future of pictures because of the influx of sound and stage players, Seiter was declaring sound would be a God-send to pictures, buckled his belt a notch tighter and started in to show the world that directors of silent drama could be the best directors of the talkies.

That he was successful is evident from the pictures he has made and from his position today. Since the advent of sound Seiter has made every type of picture from heavy dramma to slap-stick musical comedy such as "Going Wild," which he is now directing with Joe Brown of the big mouth and twinkling feet as the outstanding feature. He has developed into one of the most versatile directors in the business, and attributes most of his success to the talkies and to using horse sense in making them.

"The Talkies," says Seiter, "have been the salvation of the motion picture industry. Lord knows what would have happened if the sound development had not happened when it did. Everyone knows that the picture business was in a bad way when sound first hit us. And then the picture business took on new life and started all over again to become the greatest entertainment business on earth. We owe it all to the talking pictures."

"At first there were many who feared that the talkies would put the silent directors and players right out of pictures. I never thought so. All that was necessary was to use a little horse sense and go about the making of pictures in a natural manner. The problem of mechanics was up to the technicians. If they could record them and the cameramen could photograph them, why couldn't the directors stage them and the actors play their parts? Of course, the players of the silent days worried about their voices. But a little voice training and the matter of voice was taken care of. We always had our players speak lines in the silent drama. These lines were never heard. But what difference is there between them and the lines of today? The only difference is that the lines today are recorded and are heard with the picture. Not much of a problem there. The greatest problem was a mental one."

"However, there was another type of silent screen individual who had his job cut out for him. That was the director who never knew his story, and who habitually 'shot from the cuff.'

He had to get to work and learn his story, for there is an exactitude which must be observed in talkies. You cannot shoot a few thousand extra feet, hoping that they will save the picture in some rough spot. You have to know your story and have it carefully plotted and planned or you are lost. But that is not difficult.

"Talkies have proven one thing. That is that the screen has not needed the stage folk. Look about you and you will see that the great faces of the silent days, with very few exceptions, are still with us, scoring tremendous hits with their voices. Of course there are some new faces from the stage. That was certain, for some of the stage people had talent to offer that could never have been used in the silent days, but which is magnificent now.

"Stage players who came in on the first wave of talkies found more difficulties to face than did the silent screen players. All this hinged around the technique of screen acting. And right there the screen players had the advantage. They knew their screen technique. God gave them voices, so all they had to do was use them. But the stage players had to acquire that screen technique. Some of them couldn't. On the stage the players play long shots all the time, directing their actions and voices to the back rows as well as the front. Many of them couldn't overcome this when they tried the screen. There is a technique in picture acting that is peculiar to pictures alone. It is a simple matter for screen players to play their roles. So, there was no reason why the screen players should not succeed.

"Talkies have made the screen a decidedly improved medium of entertainment. We can now present things that could never be put over on the silent screen. The sound of dancing feet has a peculiar fascination. Watching silent feet dancing on the old screen was no thrill. But now it is different. Then, too, the matter of seeing a star sing in the old days was worse than boring. Just some one sitting there opening and closing his or her mouth. Gestures were ridiculous. But now, when a great singer opens his mouth in song we feel the thrill of his voice and his personality.

"Comedy lines that throw an audience into stitches of laughter are possible now where they were not before. Oh, yes, this matter of talkies has made pictures, and with the improvements that are being made there is no limit.

"The talkies have brought about another change that is for the better. It is that of demanding acting ability rather than mere beauty. In the old days a beautiful girl could be photographed to appear like a million dollars. She could become a raving favorite over night. But today there is more demanded. She must speak intelligently. She must act well. We are getting away from just beauty. That is good. And, thank the Lord, we do not have elocution, either. Our players are speaking naturally and not in a Shakespearean manner.

"In the field of cinematography, too, there was a fear at the start that the talkies would be harmful. They were at first when all was subjugated for sound. But now our cinematographers are giving us just as beautiful photography as ever before. Take Sol Polito, for example, who is photographing this picture. He is giving us the most beautiful photography you would ever care to see. And our photography, like our acting, will continue to improve as we become more accustomed to the matter of sound equipment. Our cinematographers now have about forgotten that there is sound and are giving us the finest photography in the world, as our American cameramen have always done.

"Yes, talkies are wonderful. They have done much for pictures and will do more. We will have stage people filtering in from time to time, especially in musical comedies and the like, but there is nothing to fear on the part of the silent screen players. They have been in talkies long enough now, anyway, to be classed as talkie screen players. The silent days are past and gone."

PROGRESS IN THE INDUSTRY

Highlights of the Report of the Progress Committee
of the Society of Motion Picture Engineers Given
at the S. M. P. E. Spring Meeting

INCREASED interest was noted in the past six months in the subject of wide films. Several different widths were proposed, and of these 70 mm. and 65, appear to have been most favored. A sub-committee of the Standards Committee of this Society held several meetings to encourage the adoption of one width as standard. The personnel of the sub-committee consisted of the leading engineer of the producing organization interested in this problem. A feature picture, "Happy Days," and a newsreel on 70 mm. film, were shown as a regular program, opening March 14 at the Roxy Theatre on a screen 41½ feet by 22 feet. Several other theatres were also equipped to handle this type of film, and at least four feature pictures were known to be in progress.

Definite advances in optical systems, processing methods, and the experience that follows production problems on a large scale, all contributed to a substantial improvement in the quality of color pictures.

Two huge sound stages have been completed in Hollywood recently by two producers. One of these comprises a theatre auditorium capable of seating 1500 persons and a section which is also designed as a theatre stage in size, 75 feet deep, 80 feet wide, 120 feet high. This stage has been designed particularly for the production of lavish spectacles. It is equipped with a steel curtain weighing 65 tons, and each of its 12 floor sections is fitted with a hydraulic lift. A vertical steel track, 65 feet high, permits camera shots in synchronism with the rising stage and curtain.

The increased use made of incandescent lights has necessitated the installation of refrigeration plants in studios in connection with ventilation systems.

A novel feature of the sound studio at Wembley, England, is a tank fitted with a camera booth permitting under water photography. The four new German studios at Neubabelsberg are built as the arms of a cross; all recording and monitoring being done at the center.

A novel lens device for securing wider pictures without the use of wide film is of interest. It consists of two lenses held in a mount which screws onto the front of the camera. A lateral compression of the image is produced so that nearly three times as much image is included in the normal frame. The picture is then expanded to three times normal width on projection.

The added weight of sound-proof housings resulted in the design of stronger tripods. One of these called a "camera dolly", was constructed of telescoping steel parts attached to a triangular, rubber-tired traveling support.

Portable dimmers were devised for use in the Hollywood studio. They were used individually or in connected units of 2 or 3, for sunrise or sunset effects. Each unit handled 20 kilowatts.

A joint committee of the Producers and Technicians branches of the Academy of Motion Picture Arts and Sciences reported on an investigation of arc lighting in 15 Hollywood studios. Three types of filters were found in use: (a) individual choke coils for each lamp unit; (b) choke coils for each group of lamps; and (c) the use of large electrolytic capacity across the generator windings. The investigation is being continued with plans for making oscillograph records of the commutator ripple at each studio.

Abadie reported before the cinematographic section of the French Photographic Society on some interesting experiments with gaseous illuminants. Mercury and neon cannot be used effectively in the same tube to give a white light, but when their combined light is supplemented with that from vaporized antimony and arsenic, a good white light is produced for the photography of colored objects. A lamp has been produced which contains neon gas and a cadmium-bismuth alloy at the cathode. After heating, the cadmium is vaporized and its arc given a light of desirable spectral distribution.

Several French studios have commenced sound productions on a large scale, a number of them by the variable area process. Societe Gaumont which until quite recently recorded on the full width of a separate film by the Danish Peterson-Poulson method have adopted fixed density recording in the margin of a separate film. This record is printed subsequently on the border of the film bearing the positive image.

Great interest has been shown in the sound school sponsored by the Academy of Motion Picture Arts and Sciences and with the completion of the fifth and sixth sections, more than 900 studio workers will have taken the course. The lectures presented by various authorities before this school have been assembled and published as a Technical Digest.

The Debie camera has been fitted with a sound-proof housing consisting of a box, containing the motor drive encased under the camera, and a cover on a vertical track which may be lowered or raised quickly by the movement of a hand lever. All controls are accessible from outside the case when it is closed. The merits of 16 different types of camera silencing housings used in Hollywood studios were tested by a joint committee representing the producers and technicians.

Booms for holding the microphone over the actors have undergone material development and several ingenious devices are now available for handling microphones on the set.

A modification of the Poulson magnetized wire recording method uses film base impregnated with colloidal particles of an alloy of nickel, cobalt and iron as the magnetically susceptible recording material. The film possesses a slight lavender tint when so treated.

Another novel recording process is that suggested by Madelar which records a groove on the film support by means of a diamond stylus.

Printing machinery was being redesigned rapidly for better quality and more rapid production of sound-on-film prints.

One manufacturer of printing equipment brought out a single operation printer and another manufacturer was reported to be working on a new model.

One of the several problems connected with the reproduction of sound has been the proper control of sound level in the theatre. Much use and some abuse of fader control has resulted from efforts to correct for volume variations resulting from recording sound at different levels and which were not entirely smoothed out by re-recording. One studio has devised a "squeeze track" for the purpose of adjusting these differences in level. This consists in blocking out part of the sound track by exposing it before development to a negative consisting of a black line of varying width contained between two black lines filling up the remaining space of the track on each side of the track itself, which is in the center of the space.

Equipment for cutting has been developed on a basis of the needs experienced for sound pictures and many of the makeshift devices are giving way to commercial products embodying the necessary features for handling sound films. Three designs of one type of equipment were available for sound film editing: (a) a sound picture synchronizer for use with records on separate films; (b) a disc reproducer; and (c) an apparatus for use when sound and picture are on the same film.

As a result of a serious studio fire in the east and a laboratory fire on the west coast during 1929, a great deal of pressure was brought to bear on all laboratories to increase their safeguards for fire prevention. Even before the two fires, however, a committee from all laboratories was appointed by Mr. Will Hays to work with the National Board of Fire Underwriters to revise the code of recommended practice for laboratory requirements.

Impending adoption of wide film introduces problems for the film exchanges, since the larger reels will require larger shipping cans, and will cost more to ship because of their increased weight. An average reel of 70 mm. film weighs 34 pounds and rewinds

(Continued on page 36)

SNAP

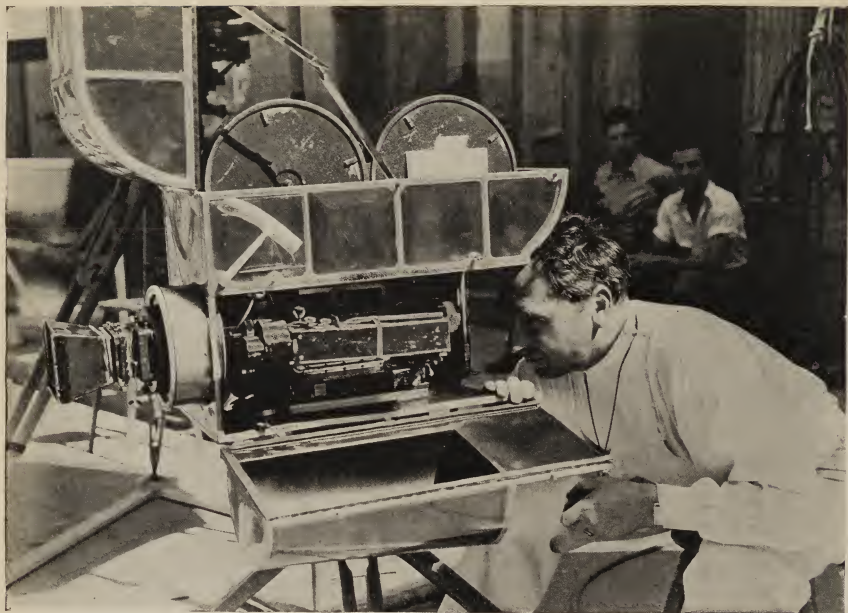
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Hal Mohr and New Warner Bros. Camera "Blimp"

Warner Camera Blimp

(Continued from page 10)

The second line of attack has proven more immediately fruitful. It has consisted of efforts to reduce the size of the booth to such a radical degree that the camera alone remained covered, while completely mobile, and entirely accessible to the cameraman, who could once more return to the set as a visible person.

This line of research has brought forth many interesting designs, but almost without exception they have suffered from a common failing: they have not been adequately sound-proof. All of them have proven themselves vastly more mobile than the booths, but they have paid for it by some sacrifice of sound-impedance. Therefore, though a number of the studios have standardized on some form of lighter camera-cover, or "blimp," an equal number, more cautious, perhaps, reluctantly stuck to the unwieldy, but sound-proof, booths.

My own previous experience with experimental "blimps" having been anything but satisfactory, I naturally inclined toward the latter attitude. It was, therefore, profoundly interesting to me when recently I was called to the Warner Bros. Studio to direct the photography of several pictures, to find that my arrival coincided with their general adoption of a new and very remarkable "blimp" of their own design and construction. My experience with them during the making of these pictures proved that these blimps are not only as perfectly sound-proof as the best booths, but that they are, in almost every respect, as mobile and convenient to operate as an un-covered camera.

Constructionally, this newest "Blimp" is quite as radical as are its results. Instead of being, as most previous types have been, a structural replica of the big booths, it is comparatively small and light. It consists of a light, but rigid aluminum framework, surfaced inside and out with sheets of a special cellulose material imported from Germany. Between the two layers of this sheathing is a comparatively large dead-air space, which is responsible for the greater part of its sound-absorption. This construction would make it possible to have an almost transparent "Blimp" if it were necessary, but normally they are

painted on the inside with a flat, black paint, to eliminate undesirable reflections.

In form these new "Blimps" conform rather closely to the outlines of the cameras within them. The entire top, and the larger parts of both the left-hand side and rear walls are hinged so that they swing very wide open, leaving the cinematographer unusually ample access to his camera when that is necessary. The camera is placed in this "Blimp" exactly as though it were to be used normally with the exception that the matte-box, etc., at the front is removed and mounted outside of the "Blimp." The usual Vitaphone synchronous motor is used. The camera is mounted on a fully-insulated base within the "Blimp," and held in place by the customary screw, which is operated from outside of the "Blimp." The "Blimp" itself is secured to the tripod by means of a sub-base, which fits upon the regular head of a Mitchell tripod. As the complete "Blimp" only weighs thirty-seven pounds, it can be used satisfactorily on any ordinary tripod, but for the sake of safety, the Warner engineers have evolved a special rolling tripod for it, which is somewhat lighter in construction than the commercial models used with the heavier "Blimps" used elsewhere.

In use, this new "Blimp" gives the cinematographer almost as complete freedom as he would have with the camera alone. When opened, he has complete access to every important part and adjustment of his camera; when closed, he finds the camera adequately sound-proofed, but still with the more important units visible, and the controls accessible. The "Blimp" is so balanced that it may easily be panned and tilted in any way desired. The focus may be adjusted by means of levers working on twin dials on either side of the case. The finder, which remains in its normal position at the side of the camera, is always visible through a large, hooded opening at the rear, conveniently close to the rear of the finder. The opening through which the picture is photographed is, of course, fitted with a plate of optically ground glass. But here is one of the most unique features of the "Blimp": this opening, instead of being merely a fixed window in the front of the "Blimp," is a comparatively small sheet of glass fitted into a sliding collar, which, in turn,

(Continued on page 44)

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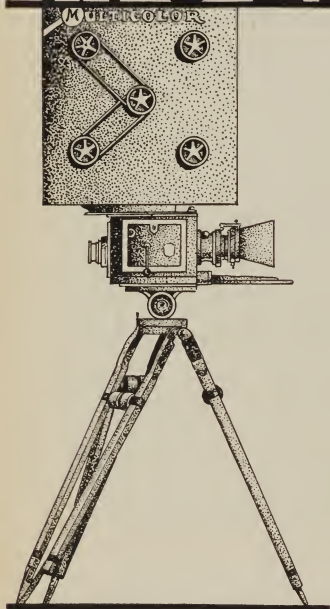
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S. M. P. E. Meeting

(Continued from page 13)

The following noon the women were entertained at lunch in the home of Mrs. C. Francis Jenkins.

The Wardman Park proved an ideal place for the meeting, being far enough away from the center of the town so that few members played hooky from the long sessions. Furthermore, the Little Theatre located in the Hotel made a splendid place for the meetings. This theatre was wired by R. C. A. Photophone with its theatre equipment especially for the meeting and the projection of all pictures was capably handled and projected. The same organization supplied portable sound reproducing equipment for the banquet and should be congratulated upon the efficient and speedy manner in which the films at the banquet were shown. During the meeting the Board of Governors made a number of important resolutions. One of these was the establishment of an annual award in the form of a gold plaque or medal to be given in recognition of outstanding technical or scientific achievement in motion picture engineering to a member of the Society. This award will be presented for the first time at the fall meeting, it is expected.

A petition of Chicago members of the Society for permission to form a Chicago Section was also granted by the Board of Governors. Although no territorial limits have as yet been set for this Section, it is expected that it will include members residing in the territory between Denver and Cleveland, Ohio.

The Board of Governors also voted to make the offices of president of the Royal Photographic Society of Great Britain and Ireland and Die Deutsch Kinotechnische Gesellschaft permanent honorary members of the Society.

This meeting demonstrated as never before the real importance and strength of the society in the motion picture industry. This was evident even in the way Washington newspapers treated the meeting in the columns of their papers. The Society now has more than 700 members with representation in practically every country where motion pictures are exhibited or produced.

Everyone who had anything to do with the arrangements and carrying out of the meeting should be congratulated on the

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smooth way in which the meeting was handled. It proceeded from beginning to end without a single hitch and was testimony of the hard work and long hours put in by the various members who helped to make the meeting an outstanding success.

A New Recorder for Sound-on-Film

An abstract of paper by E. W. Kellogg, R. C. A. Victor Co., read at S. M. P. E. Spring Meeting.

A NEW model of studio recorder has recently been adopted by RCA Photophone, Inc. The most important difference between the new machine and its predecessors is in the means employed to give uniform motion to the film. A sprocket, no matter how perfectly made, nor how constant its rate of rotation, does not impart uniform movement to the film, a slight slip or jerk occurring as each tooth engages or disengages. The effect may be of the nature of a "flutter or gurgle," but frequently has only the effect of making the high tones "wheezy" or of adding ground noise.

The new machine employs not a sprocket, but a smooth drum to move the film past the exposure light. In this respect it is like its predecessors. The drum is free running, its speed being fixed by the film and varying with film shrinkage. The drum shaft carries a flywheel, and attached to the flywheel is a copper flange in which eddy currents are induced by an electro-magnet which is driven at a speed about 15% above that of the drum. This serves the double purpose of damping out oscillations in drum speed or "huntint," and of supplying a forward torque sufficient to overcome friction. The result is that the film has so little to do in helping or retarding the drum, that it runs with decided looks on either side of the drum, and no jerks are transmitted from the sprockets. Considerable latitude in magnet current is possible without impairment of results, and the most sensitive tests fail to indicate appreciable variations in speed. The fact that speed constancy

is not dependent on precision construction nor exact adjustment insures for consistently satisfactory performance.

Steel, Glass Partitions for Theatres, Exchanges

OFFICE partitions of steel and glass in finish to suit the exhibitor or distributor for use in theatres and exchanges, as well as offices, are being manufactured by the Sneed & Co., of New York. Non-inflammable materials are said to be used where steel, glass and composition board partitions are installed. Vertical and horizontal members are designed, it is claimed, to carry and conceal all wiring. Outlets may be placed on any horizontal or upright member of the partition without being noticed.

Neumade Co. Marketing Safety Film Leader Box

A SAFETY film leader box, claimed to be the only apparatus of its kind, is being marketed by Neumade Products of New York. The device is said to insure protection against fire and has a tight looking malleable casting with a spring door. The leader feeds from the magazine through the mouth tightly lined with asbestos felt. Two cement bottles are fitted in the base and are handy for gluing purposes.

Non-Combustible Cement

Non-combustible film cement, said to have passed several tests and also approved by the Department of Insurance of Michigan, is being distributed by the Hewes-Gotham Co., of New York.

The German "Suddeutsche Telefon-Apparate-Kabel-und-Drahtwerke A. G. (Te Ka De), of Nurnberg, has published a communique in the trade press to the effect that besides Siemens-A. E. G. and Lorenz, it is also authorized to manufacture sound-film amplifiers, and will soon start on this new venture.



By WILLIAM STULL, A. S. C.

Preserving the Vacation

AT THIS time of year, there is but one really important issue before the public: where shall we spend our vacations? Beside this mighty problem, such minor issues as Prohibition, the Tariff, and the fate of nations all fade into complete obscurity. Homes and offices everywhere are the scene of hundreds of heated debates as to the merits or demerits of various resorts, and it is no longer safe to visit your friends, lest you be one drawn into this annual family battle.

There is only one point upon which every prospective vacationer agrees: that is, that all vacations are too short. Wonderful as they are, the best of vacations must end some time—and, the better they are, the sooner they seem to end.

Here is where the Amateur Movie Maker can score, for, by the intelligent use of his camera, he can make his vacation joys last forever. But to do this, he must use his camera intelligently. His vacation films cannot be of the common, or garden variety of animated summer snapshots. They must be carefully planned, well executed, and finally edited to secure the greatest amount of general interest.

The first thing to remember in this connection is that any movie that is of lasting interest must tell some sort of a story. It need not be a pretentious dramatic subject, but it must be more than a disconnected series of animated snapshots. Whatever it may be, it must show clearly that there was more of a purpose behind its conception than the mere, momentary fun of 'making movies.' Unless there is such a purpose, it can hardly escape being forgotten almost before the summer is over, like the ordinary run of summer snapshots. But with such a purpose, it can be perennially interesting.

This leads to the conclusion that successful amateur movies must be deliberately staged. This is true of even the most apparently spontaneous films, for cinematic action, like extemporaneous speeches, is always best when carefully prepared in advance. This preparation, as has been frequently said before in these pages, does not necessarily mean the preparation of an ironclad scenario for every bit of shooting, but it does mean that the cameraman-director must have a good idea of what he is going to photograph before he starts. This is particularly vital in most amateur work, for in it, except in the filming of co-operative, dramatic productions, the man behind the camera is both cinematographer and director, and, in a word, the leader of the enterprise. And a leader should always be known to his subordinates as a man-who-has-thought.

Started from this foundation, vacation films can adapt themselves to any requirements, and any circumstances. They may be simple little narratives of some family outing, or they may be pretentious amateur photoplays requiring the concerted efforts of a large group. But there is one rule which will apply to every case: Make sure what story your films are going to tell, and then go and get it; above all, don't be afraid to use all the film necessary to "cover" your subject completely. The shears will always eliminate superfluous scenes, but there is only too often no cure for the scenes you forget to get.

Vacation Scenics

Probably the most obvious form of vacation film is the personal travelogue. Well-made travel films are always interesting, and if they are made with the personal note, they are doubly so. We always want to tell our friends what we've seen and done on our vacations; and a well-planned picture can tell more than a thousand words.

But such travel films must, like any other films, have a definite, motivating idea behind them, and that idea must be uppermost in the maker's mind during every minute of the

filming. This idea governs the treatment of the picture as a whole, and the making of every individual scene. Speaking broadly, there are two main types of treatment for the amateur scenic film. First, that which concerns itself primarily with the place itself, and second, that which concerns itself primarily with the maker's individual experiences at that place. Either type of picture can be made individual and interesting, though naturally the latter affords more opportunity for the little, intimate touches which make for individuality.

Another important thing to remember is that very often you needn't do it all yourself. Most of our National Parks, and many of the great cities and other famous places, here and abroad, have already been very excellently filmed by others, who have made their films commercially available. In such a case, it is usually a wise plan to be familiar with these commercial films, for they can often be used and inter-cut with your personal shots in such a manner that better personal films can be had at a far smaller expenditure of time, trouble, and money. In addition, these commercial films frequently contain scenes of great interest, but which the average amateur may not have the time or the opportunity to photograph himself.

But travelogues, record-films, and playlets are by no means all that can be made on a vacation. Most of us have some other special interest other than photography; and this interest can very frequently be combined with our vacation cinematography to make highly unusual films. For instance, nature-lovers can make fascinating reels merely of the fauna and flora of the sections they visit (or their home sections, too). There is a great and useful field for such films. In a recent issue of *Filmo Topics*, Alfred M. Bailey remarked, "We know African animals, through the movies, better than we know the wild life of our own country." This statement is undeniably true, and it offers the amateur movie-maker a rich field of experimentation. For our wild life, though perhaps not so prolific or so well publicized as that of the Dark Continent, is no whit less interesting, nor any less difficult, and dangerous to photograph. Shooting jackrabbits and prairie-dogs with a camera may not be dangerous, but it is no less difficult because of it. And, if we want a thrill, our Grizzlies and Cougars are always willing to accommodate!

Aside from wild-life, there are as many further subjects as there are interests. The motorist, the golfer, the air-enthusiast, and many others can find remarkable chances for unusual films of their hobbies wherever they go.

Technical Hints

As vacation films are often made under conditions entirely different from those customarily encountered, a few strictly technical hints might not be out of place here.

Exposure always seems to be the first troublesome problem. The best aid in this line is, first of all, the use of common sense. The conditions themselves may change, but they generally fall under the same classifications that the manufacturers have provided for in the exposure-charts attached to the cameras. If still in doubt, a Bell & Howell Photometer or the *Drem Cinephot* will always give the correct answer. Always remember, too, that where an unusual amount of light is reflected from the background—as in seaside and lakeside pictures, and those made where the sky fills a large part of the picture—the exposure should be cut down. When in the mountains, the altitude often has a similar effect. Therefore a good idea is to give normal exposures below the 4,000 ft. level; from there to around 5,000 ft., $\frac{1}{4}$ normal; and from there up to six or seven thousand feet, half normal. Further—

(Continued on Page 40)

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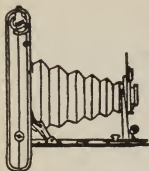
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Solving the Amateur's Problems

Question: The long shots I make with my 6" telephoto lens are often hazy and indistinct. What is the cause of this, and how can I remedy it?—J. B. H., Boston.

Answer: The cause is usually atmospheric haze. This reflects an unusual amount of blue light into the lens, and as the film is much more sensitive to this light than our eyes are, the distance becomes overexposed and obscured. The remedy is to use a color filter strong enough to hold back this excess of blue light, and let the rest act on the film. The proper filter for this depends on the amount of haze, etc.; at least a 2x filter should be used, and preferably a 4x, and proper compensation should be made for them in the exposure.

Question: I have been using a 9 mm. camera bought in Europe, but since returning to this country I have decided to change to a 16 mm. standard. Can I have my 9 mm. films reprinted on the standard 16 mm. film?—B. D., Philadelphia.

Answer: This is quite possible, although your films would suffer some loss in delicate photographic gradation, as they do in duplicating. Also, there would be a slight alteration of the proportions, as the 9 mm. "frame" is of slightly different dimensions than the 16 mm. There might also be some difficulty in finding a firm equipped to handle the smaller film; but we are informed that Albert Teitel, of 105 W. 40th St., New York City, specializes in reprinting all such off-standard film onto standard 16 or 35 mm. stock.

Question: What is the best way to insert titles in a dramatic film: assembling the scenes in their correct order first, and then cutting in the titles; or putting the titles in during the assembling of the scenes?—A. C. F., Bar Harbor, Me.

Answer: The best method is to roughly assemble the scenes without the titles. After polishing these up a bit—eliminating the N. G. scenes, making sure that they are rightly arranged, etc.—you can project the film, and begin to consider the titles.

At this stage the reason for the delay will become apparent, for you will find that various changes which will inevitably occur during production will have made some of the titles originally planned unnecessary, while on the other hand, unexpected incidents and impromptu scenes will offer opportunities for new ones. Therefore this method of inserting the titles will give free rein to originality in both shooting and titling, and result in a smoother, better, and more finished picture.

Question: Is it possible to make scenes indoors by artificial light? If so, how strong a light will I need to photograph a subject sitting at a table?—S. B. S., St. Louis.

Answer: It is quite possible. The amount of light required depends on several factors, including the type and design of the lamps, the size and coloring of the set, and the aperture of the lens.

For such a scene as you mention, 2,000 Watts should be sufficient with an F: 3.5 lens, provided that the lights are carefully arranged, and that some reflectors are used. It must be remembered that the illumination of a subject decreases as the square of the distance from the lights, so don't try to illuminate too large an area. Naturally, the faster the lens used, the fuller the exposure will be, and either the less light will be needed for a given area, or the larger the area that can be covered with a given amount of light. You will also find that the type of light best suited for such use will vary with the kind of film used. With ordinary film, arc lights are more efficient, while with Panchromatic film, Incandescents are better, although arcs equipped with the so-called "Panchromatic Carbons," are almost equally satisfactory.

Anti-Pirates

THE German talking apparatus construction industries are considering measures against piracy in the talking apparatus field. A large number of illicit outfits in use in small German cinemas is becoming more and more a danger, as the miserable reproduction in these theatres endangers the whole talking movement in Germany.

Motion Picture Photomicrography

By Herbert C. McKay, F.R.P.S

IN a recent issue of the *American Cinematographer*, an outfit for 16 millimeter photomicrography was shown. This combination was decidedly interesting, but the laboratory worker will notice certain features about it which offer obstacles. Principally, the control is exerted through watching the field by means of a demonstration eyepiece. The prism arrangement in such an eyepiece is such that the light is about equally divided. This cuts down the light available for photography, and also presents to the eye an intensity of light which is painfully uncomfortable.

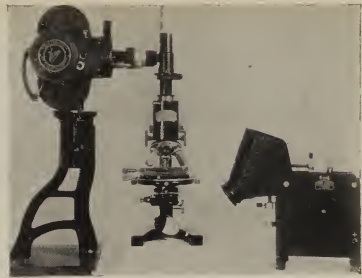
The equipment illustrated in the accompanying photograph completely overcomes this difficulty, as the light beam is split by a prism which directs approximately 98% of the transmitted light to the film and the remaining 2% to the eye. This permits the use of all the light which delicate specimens will tolerate while providing a perfectly comfortable light for the visual control.

In detail this equipment, with which the writer has made several hundred feet of perfectly satisfactory sixteen millimeter micro films, are given herewith.

The light source used is an automatic arc lamp using photo white flame carbons. The mechanism is actuated by clock-work, thus maintaining a constant arc length with consequent constant actinic factor. The lamp carries an aspheric condenser of high efficiency as well as an iris diaphragm to cut off extraneous rays.

The microscope is a laboratory research model with all controls conveniently located, so that both coarse and fine focusing as well as the stage movement may be operated during the camera operation. It is quite possible for the practised worker to keep the moving subject in the field and to maintain focus simultaneously. The design of the stage movement controls is such that it is decidedly superior to the usual type for photomicrography and considerably better than the manually controlled slide favored by many photomicrographic technicians. It is of interest to know that this instrument is fitted with a flat field, high aperture aplanatic condenser, while all objective lenses are apochromatic, giving the finest photographic results possible with the microscope; the apochromatic lens corresponding practically to the anastigmat used in photography and technically to the apochromatic lens used by photoengravers.

The extension at the top of the microscope tube is the special 98-2 beam splitter. This is in a special mount, permitting the most accurate matching of image planes of eye and camera. This beam splitter mount carries an extra ocular, in



A complete equipment for making microscopic subjects with 16mm. camera

the focus of which is supported a field of green glass with a colorless rectangle in the center indicating the exact boundaries of the film frame. In setting the apparatus up for use, a matte surface prism is placed in the camera, and a stage scale or micrometer upon the stage of the microscope. Looking into the prism (which will fit most 16 mm. camera gates) the microscope is carefully focussed until the scale is plainly seen, in sharp focus in the prism. The tube position is noted by the vernier scale, and the eyepiece of the beam splitter is then focussed to correspond. This gives a positive coincidence of foci in both camera and beam splitter.

When this is done, the stage micrometer and prism are removed. The camera is then loaded and all is ready for the actual photography.

Naturally the camera lens is entirely removed and the beam splitter connected to the camera by a light tight tube with a trap at the end allowing a certain slight motion for focussing, without allowing extraneous light to reach the film.

Using the arc lamp described, a 20X objective and 10X ocular giving a total of 200 diameter magnification upon the film, normal speed (16 per second) gave fully timed negatives upon panchromatic stock. The subjects most often used in making home entertainment films were the tiny organisms which can be found in every pool of stagnant water. The film magnifications used are from 70 to 300 diameters. Test exposures have been made at magnifications as great as 1500 diameters with all satisfaction.

This equipment is in every way thoroughly satisfactory for the scientist and laboratory. It is also so simple that any amateur who can learn to use a sixteen millimeter camera properly may enter the field of cine-photomicrography with every assurance of success.

New Film Tariff May Be Set in South Africa

A NEW tariff rate is proposed in South Africa on film due to protests over former import charges. New rate fixes two-pence per foot for silents and three-pence for sound product, eliminating the idea of the difference between two shillings and two-pence per 100 feet and 30% ad valorem. These charges apply to standard size film.

Amateur photographers using baby cine-Kodoscopes would pay increased duty on positives not exceeding 10 millimeters wide, a ha'penny a foot on film not exceeding 18 millimeters and a penny a foot on blank stock.

Duty on blank stock in amateur width remains unchanged so that home pictures are not affected, unless they are made outside South Africa and brought in under the new impost.

New Lens for Color

COLOR-FILM projection requires 25 per cent more light than a black and white film, states an announcement published in the German trade press by the Zeiss-Ikon company. In order to obviate this difficulty, the company is manufacturing special lenses for color-film projection. These lenses have a much larger diameter than the ordinary ones and, if used with mirror reflector arc lamps, take in a greater number of light rays. The picture thus obtained is as clear as a black-and-white film, without any additional light supply.



Making pictures of microscopic subjects with 16 mm. camera

PROFESSIONAL AMATEURS

Mary Astor Photographs "Holiday"
With a Filmo

By William Stull, A. S. C.

FOR a woman to admit an interest in things mechanical and technical was, a generation ago, to admit herself a tomboy. Today, it is to affirm that she is a "regular girl." But strangely enough, in the world of motion pictures, the effects of the old tradition still remain: few indeed of the beautiful women of the screen have any deeper understanding of the fascinating and intricate machinery by which they have been made famous than is required in posing for publicity photographs of new apparatus. This is particularly true in the field of cinematography. Despite the fact that they literally live by cinematography most of the feminine stars think no more of it than the average housewife does. They know, of course, that they look more beautiful from this angle, and that Johnny, or Tony, or Ollie can somehow make them look more beautiful than anyone else can; but beyond that, they neither know, nor care to know more. And, when they condescend to manipulate a camera—which need only be beautiful to look at—their work is of the order of the crudest snapshooting school.

But there are exceptions to every rule. In this instance, there is Mary Astor. Not only is she interested in what the men photographing her are doing, but she is understandingly interested in it. For from the time of her very entrance into pictures, she has been fascinated by the mechanics of making movies. And, being a very normal, enthusiastic young woman, she has taken full advantage of the opportunities offered her, and learned more about the craft than many a professional cinematographer knows. She has delved into the mechanics of cinematography, of lighting, of cutting, of title-writing and of projection until she has mastered them all. And this interest is no mere pose with her, but the sincere enthusiasm of a true amateur photographer.

And being a photographer herself, Miss Astor has become famous among the camera fellowship as one of the easiest stars to work with. Her understanding of photographic problems and technique enables her to cooperate intelligently with the men behind the cameras—to be patient while they wrestle with the scores of knotty problems daily confronting them, to be helpful, and, above all, to be personally interested in them and their work to a degree rarely found in feminine stars. Perhaps this personal interest explains the sympathetic photographic treatment she invariably receives, for, as one man remarked, it is only possible to photograph a star perfectly when you feel a personal interest in that star. And if the star shows an understanding interest in you and your work, your own interest is inevitably reciprocal.

But Mary Astor does not interest herself in cameras and cameramen merely to be popular. "No," she says, "I'm afraid it's for a far more selfish reason than that: you see, I happen to really enjoy photography!"

"I've always liked it, ever since my first picture experience. One of the first pictures I ever played in was a little two-reeler made down in Maine. It was 'way off in the country, and the whole company lived together in one of those quaint



Mary Astor using her Filmo at Pathe Studio

New England farmhouses while we made the picture. Part of the house was fitted up as a laboratory, and the boys developed their negative there, printed the dailies, and even cut the picture. I was fifteen then—an inquisitive youngster who wanted to know how everything was done, and all about it. I found out, too, for instead of being bothered, everyone was eager to tell me whatever I wanted to know. I learned from the cameramen just what their work was, and why everything was done thus and so. Then the laboratory men showed me how to develop the film, and how to print it, and told me, too, the why of these processes. After that, the assistant director, who was also the head (and only) cutter, showed me how the scenes were assembled and spliced. He was an awfully nice young fellow, just a little older than I was, and we had the best times editing those little pictures! We made several pictures there in Maine, and every evening, after the day's shooting was over, I'd slip into the laboratory, and help with the developing, or the printing, or the editing. Before our stay was over I had learned so much that I was almost able to edit a picture myself.

"With such a start, how could I ever lose my interest in the technical part of the work? And, even if I had wanted to, Mother would never have let me. She never tired of reminding me that the actors weren't by any means the whole show. Whenever I began to feel that I was getting pretty good, she'd

ask me. "Mary, where would you be if it weren't for the cameramen, the cutters, the electricians, and the laboratory men?" There was only one answer to that!

"But even without that sort of a reminder, how could I keep from being fascinated by the wonderful work the men who photographed my pictures were doing? Every day I'd see them doing the impossible right before me—meeting physical and technical problems with the same calm spirit, and carrying on regardless.

"So of course I kept up my interest in photography. I had some still cameras, and kept them busy most of the time; but I always wanted a movie camera that I could use for personal movies.

"Finally the 16mm. cameras came, and I got my wish—or rather, I got my *Filmo*. I got it, too, just the way I'm sure a lot of other girls have gotten theirs: just before Christmas I enticed Mother and Dad into Bell & Howell's Hollywood branch, and admired the new 70-D *Filmo* long and loudly, in a way no parent could mistake. Oh, I'm afraid I was quite shameless about it! Anyway, when Christmas came, my *Filmo* came, too, and I spent the rest of the day making my first roll of film. Since then, I've used every excuse I could to add to my outfit. For instance, on Mother's last birthday, the nicest present I could find to give her was a new *F:1.9* lens! But the giving hasn't been all one-sided, for just a little while ago she and Dad surprised me with a beautiful "Treasure Chest" to keep my camera and things in. Maybe, though, that was done in self-preservation, for they always seemed to find themselves stumbling over cameras, films, or something like that.

"Of course, as I'm just an amateur movie-maker, most of my films have been just like those of anyone else. I've filmed my home, my family, and my pets in every way I could think of—and I'm sure some of my friends are beginning to look curiously for a camera before they'll trust themselves to speak to me! But it's been so much fun! I've at last been able, too, to put into practice the things I learned about editing and titling pictures. I've made my own titles, too, cards and all, and photographed them myself.

"And this hobby of movie-making has led me into some strange tricks. For instance, the other day I was sick in bed just at a time when I wanted to try out some new lights I'd given myself. That was quite a disappointment—until I decided that, doctor or no doctor, I'd make my movies then and there! And I did, too. I had my maid set up the camera and lights, and then I directed myself in a funny little reel that I made without leaving my bed.



Miss Astor and her *Filmo*

"Naturally, like all other amateur movie-makers, I've a desire to try my hand at making a little dramatic picture. Right now, I'm preparing a script for one, and I'm going to start shooting it soon. Several of my professional friends are interested in it, too, and are going to play in it for me; Lee Tracy, for instance, is going to be my leading man, and another friend, the heroine, and I, for a change will stay behind the camera, and be Director and Cinematographer.

"Although this is my first independent dramatic production, it is really my second dramatic one for I've made a special, silent, 16mm. version of *Holiday*, the picture I'm just finishing

(Continued on Page 44)



Miss Astor has the co-operation of a technical staff at R-K-O Studios



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**Bell & Howell Introduces Special Lens
Cleaning Kit**

EXPERIMENTS conducted some months ago in Hollywood showed that with materials then available it was almost impossible to properly clean a photographic or projection lens. It was even found that most of the cleaning fluids then in use actually impaired the quality of the lenses. Obviously such a situation meant imperfect photography and projection.

To solve this very important problem the Bell & Howell Company is presenting the B & H Special Lens Cleaning Kit. This will meet a very actual need on the part of both amateur and professional still and motion picture camera users, as well as projectionists.

This new B & H Kit consists, first of all, of a scientifically prepared fluid for cleaning lens surfaces. Lengthy experiments were conducted both in the Bell & Howell Laboratories in this country and in the Taylor-Hobson Scientific Research Division in England in order to secure just the right fluid for this purpose.

There is also in the kit a piece of specially tanned and hand-brushed chamois leather. This unit is particularly important as it is not the regular commercial type of chamois obtainable at retail stores. Commercial chamois, it is found, frequently contains elements which of themselves provoke a stain on the special type of glass used in photographic lenses. When rubbed by this sort of leather—a stain which cannot be removed except by regrounding and repolishing the stained surface.

Another item is a piece of specially selected, washed, lintless linen, made from Irish flax. Extreme care had to be exercised to secure a type of linen which would be thoroughly free from fillings and starches and at the same time leave no lint. Also included in the kit is a genuine camel's hair brush which is used to remove dust from the lens surface before applying the fluid.

All kinds of lenses—photographic, microscopic or otherwise, will benefit by being cleaned by the materials which compose this kit.

Complete but simple instructions accompany each kit and it is important that the instructions be followed carefully to secure the maximum results.

Unique Test for Bell & Howell Photometer

A VERY interesting test of the new Bell & Howell Photometer is reported from Chicago. It was not a blind-fold test; it could not very well be that when it was a question of looking through the eyepiece of the Photometer and measuring photographic exposures, but it was evidently a genuinely unprejudiced demonstration of what the Bell & Howell Company calls the "uncanny accuracy" of this new exposure meter.

Fifteen men who, it is stated, had never seen the Photometer before, were shown the instrument and given brief instructions as to its use. They were then asked to train the Photometer upon an object underneath an electric light—for the test was conducted at night.

It is said that one after another in quick succession, each of the fifteen used the Photometer and wrote his exposure reading on a slip of paper which was handed to a teller who alone knew the readings recorded by those taking the test.

At the conclusion of the experiment, the results were compiled. "To the surprise of everyone," we are told, "all readings were so close to each other—the variation from normal being less than one point—that if an actual camera movie 'shot' had been made, a fine picture would have been obtained from each reading. Every one who took the test would have had a good picture."

"The new B & H Photometer," states the Bell & Howell Company, "leaves nothing to guess work. No longer will the amateur movie maker need to follow a 'hit and miss' method in making exposures, optimistically hoping for the best."

The Photometer should not only be an incomparable boon for the amateur movie maker, but should be of tremendous value to the professional cinematographers as well. Still photographers should also find this instrument, of great benefit.

At present, exposure readings can be made by the B & H Photometer, for either the Filmo 70 or 75 cameras, or both. Later the instrument will be made available for use with all types of movie or still cameras.

The Pathe-Natan circuit now comprises 70 cinemas in France.



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Notable Achievement in Surgical Talks

A NOTABLE achievement in the use of 16 mm. talking motion pictures in the surgical and medical fields has recently been accomplished by Dr. W. F. Windle and Dr. H. B. Kellogg of the Northwestern University Medical School, located in Chicago.

The two surgeons, who are connected with the Medical School's Department of Anatomy, took 16 mm. pictures of a dissection. This particular dissection was extremely thorough and required about six weeks to complete. The pictures showed the essentials of the whole matter in two reels of films.

After the pictures had been completed a synchronized sound record was made on phonograph discs in which the chief surgeon orally explained the procedure shown in the movies. The pictures were then shown in conjunction with the sound record by means of the Project-O-Phone, a portable device for presenting sound movies, one of whose units is a Bell & Howell film projector.

In this dissection talkie, the surgeon's voice is heard in a running lecture and commentary all the time the pictures are being shown. Special points of the dissection are pointed out and attention is called to them. Frequently a diagram or part of the skeleton is shown in the picture and reference is made to them by the voice of the surgeon, practice which greatly facilitates understanding of the dissection. The whole picture man, of course, be presented as often as desired and thousands can reap the benefits of this dissection instead of a single class or group.

Drs. Windle and Kellogg recently took a Project-O-Phone, their picture film and sound discs, to the University of Virginia at Charlottesville and gave a demonstration before a meeting of the Association of American Anatomists. This was easily possible as the entire Project-O-Phone weighs only about 90 lbs. It comes in two units and does not require an expert operator or a fire booth.

Both Dr. Windle and Dr. Kellogg thoroughly believe that they have demonstrated a most valuable method of medical and surgical instruction.

Motion Pictures to Help Golfers Improve Their Game

"WILL 1930 help my game?" That is a question which many a golfer is asking himself today, and he is hoping that somehow or some way a miracle will happen which in some mysterious fashion will cut his score this year.

For some time the use of 16 mm. motion pictures to help the golfer improve his game has been advocated, and quite a number of golfers have been benefited, but 1930 will undoubtedly see such pictures come into substantial use for golf instruction.

In an article in *Golfdom*, George Sargent, well-known golf pro of Columbus, Ohio, comments on the practicality of Filmo motion picture cameras and projectors in his work, and also goes on record on teaching golf via movies.

"It is my firm belief," he says, "that photographic aid in golf instruction has opened a new era of speedy and sound development of the pupil's game. Any golfer can have pictures taken of himself—or herself—in action and have a professional analyze them. This service as a diagnostician will rank as an important factor in the development of the player's game. An instruction film is the most direct and forcible method of developing a lasting and proper 'muscle memory' in the pupil's mind."

In the June issue of *Golfdom* appears an article by C. A. Ziebarth, secretary of the Bell & Howell Company, on how movies can help the average golf club increase its receipts—for example, how the showing of amateur motion pictures of club tournaments, etc., will stimulate dinner business and will also build up club morale. Mr. Ziebarth writes from the standpoint of a business man who is interested in seeing his golf club register a financial success.

Berlin exhibitors recently voted unanimously in favor of a 20% increase in prices when talking or synchronized pictures are shown.

There are 12,000 theatres in Japan. About 20% of the films shown are American, but there are also six large producing companies which supply this formidable market.

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Progress in the Industry

(Continued from page 20)

ing is a man-sized job, requiring care to prevent cinching or tearing of the film.

A new model projector, as well as a new assembly for older models was announced in 1929 which incorporates as a special feature a rear shutter between the lamp house and the gate. Other features of the new model as claimed are: easy and rapid change-over from disc to sound-on-film, and means for maintaining accurate focus and centering of the picture.

The problem of equipping many thousands of theatres for sound reproduction during the comparatively short period of a year and a half has been a serious and gigantic task both from the engineering as well as the economic standpoint.

Sound picture projection apparatus is now in active use on trans-Atlantic liners, in a Chicago hotel dining room, and even in railway cars. A successful showing on a Union Pacific trans-continental train was arranged during the fall of 1929. A Delaware corporation has been formed to promote a fleet of specially designed railway coaches as the first unit of a projected nationwide system of mobile sound theatres to present pictures in small villages. The first theatre for the exclusive showing of sound newsreels opened early in November, 1929, running a continuous show from 10:00 A. M. to midnight.

An audible frequency selector has been designed for use of the projectionist to accentuate, attenuate, or eliminate certain frequencies delivered to the amplifier.

Details have been published on the technical characteristics of all the sound reproducing equipment on the French market. The only French process which is complete from the taking to the production end is that of Gaumont.

A unique generator is being marketed by an Austrian firm located in Vienna. It is known as the Rosenberg cross-field generator. An arc, such as that, in a projector, may be connected directly to the generator and the voltage and current are self regulating. Two of the four commutator brushes are short circuited. When the outer circuit is closed, a magnetic field and an armature field results in the same direction but opposed; the former increasing slowly, the latter rapidly.

A new sound-on-film portable projector equipment by RCA was announced in October, 1929. The projector and sound reproducer is housed in a metal cabinet, 24 inches square and 12 inches wide, mounted on four telescopic legs. Film magazines are located on the art side of the case.

Further details have been made available on the portable sound equipment supplied by Western Electric. The delivery and take-up reels are included on the same shaft inside the projector case. A 60-foot throw is possible giving a picture 7 feet by 8 feet in size.

A continuous projector designed by a Frenchman, M. R. Huc, has several novel aspects to recommend its consideration. Film is passed on a curved track in the form of a part cylinder before a light aperture somewhat higher than that of a single frame. An image is projected onto a mirror in the center of the cylinder and set at an angle of 45 degrees to the light path. The mirror turns at a speed one-half that of the moving film through a slight arc and then returns to the original position, while a shutter cuts off the light momentarily. A stationary image is projected on a screen placed at right angles to the original light source.

Considerable attention has been given the theatre acoustics problem during the past year. One firm has made an acoustical analysis of over 1500 theatres and made recommendations for treatment of the auditorium. A lowering of the accepted optimum reverberation time as a function of volume was reported. Theatres with square auditoriums were found in general to have better acoustic properties than long narrow theatres.

Sound motion pictures began to be used for non-theatrical purposes during 1929. The Hotchkiss School in Lakeville, Conn., was reported to be the first school to have sound reproduction facilities installed.

An application of the use of a sound recorded address was made in January, 1930, when a corporation president spoke in eleven different cities on the same evening at the annual President's dinner, through the medium of the sound picture.

Confessions of the defendants in burglary and murder trials were recorded in Philadelphia as a part of an experimental investigation on the value of the sound motion picture in criminal court practice. It is reported that a bureau is to be established for making sound pictures of prisoners so as to have records of their voices, gestures, and mannerisms.

Included in a group of motion pictures shown at the 1929 fall convention of the American College of Surgeons were four sound pictures, three of which were recorded addresses accompanying diagrammatic pictures while the fourth represented an obstetrical operation accompanied by dialogue. The operation was performed by Dr. DeLee, well known Chicago obstetrician and the dialogue was synchronized with the film by a crew of Fox cameramen. Dr. DeLee has an elaborate laboratory for motion picture photography in the Lying-In Hospital in Chicago. It is also equipped with an animation department.

Motion pictures of living cells of body tissues were made by Rosenbergs working with Carrel at the Rockefeller Institute and shown at the Thirteenth International Physiologists Congress in 1929. Studies requiring days of observation were shown to an audience in half an hour. Fifteen medical films have been prepared in a program under the auspices of the American College of Surgeons, the Motion Picture Producers and Distributors of America and the Eastman Kodak Company. Subjects made recently deal with acute appendicitis, obstetrics, vestibular function and development of the rabbit's ovum.

Starch of Vienna has made ultra-rapid motion analysis studies of micro-organisms using an Askania High frequency camera. To reduce vibration effect, the camera is attached horizontally to the wall but the microscope may be used either in a horizontal or vertical position. Exposures mostly over 100 per second were used, focussing was done with a green filter interposed, and the arc current reduced to a 5 amperes so as to minimize heating effects on the delicate organisms.

The industry is alive to the possibilities of television and further progress has been made which though rather slow is encouraging. Three producers are including reservation of television rights in their contracts. According to estimates by Jenkin about 20,000 amateurs are receiving radio movies which are broadcast from station W3XK, Washington. Other new television stations are WERN, Chicago, operated by the Great Lakes Broadcasting Company, and W2XCR, Jersey City, and W2XCD, Passaic. The last two named stations synchronized radio with the pictures and though the images were said to be hazy, the lip movements were stated to be discernible with the sound.

A new cathode ray tube of receiver giving a picture 4 inches by 5 inches has been described by Zworykin. The method eliminates the high frequency motor previously necessary for synchronization, together with its power amplifier. No moving parts are used. A fluorescent screen aids the eye's persistence of vision and makes possible a reduction of the number of images per second without noticeable flicker. The transmitter is a modified motion picture projector with means for horizontal scanning.

The selection of standards for radio television has been discussed, including picture proportions, number of scanning elements, number of pictures per second, scanning method and direction and phase or current.

A camera capable of taking 40,000 pictures per second by means of a drum having 180 mirrors, revolving 225 times per second was exhibited at a Scientific Congress in Tokio. The camera was designed by the Institute for Physical Research of the University of Tokio. Lawrence and Dunning of the University of California have been studying the characteristics of the high voltage spark by means of a camera which has a shutter speed equivalent to the taking of 250,000 pictures per second.

Cinematographic methods were used to time the high speed Schneider Cup airplane races held at Calshot, England, in the fall of 1929. A motion picture camera made pictures of the plane as it crossed the start and finish line and also recorded simultaneously the face of a calibrated Veeder counter which was actuated by a timing fork vibrating 10 times per second.

As noted earlier in this report the use of motion pictures in color continues to expand and a number of new processes have appeared although technical descriptions of them have been rather meager. An estimate has been made that 15 per cent of all pictures made in 1930 will be in color.

Newsreels made by a new color process were released by Pathe in March, 1930. The process is claimed to be equally as rapid in production as black and white prints and to avoid the use of filters and prisms. Pictures of the New Orleans Madi Gras floats were made and shown in New York the following week.

In the Raycol two-color additive process, demonstrated in England, light entering the camera is divided into two parts

(Continued on page 39)

RUSHES

Which Are Painful to a Talkative Young Man of the Movies

By A. Kinney Griffith

BARRY BARDELLY, featured player in "Hearts Aflame," was a happy man. He had a standing date with Betty Lewis, was an extra in the cast.

Barry and Betty had attained that point of intimacy where they enjoyed long automobile rides, dances, necking, gin parties and earnest conversations. They shared confidences, and tonight as they sat in her Hollywood apartment, Barry informed the young lady of his choice, that a great day was in store for them.

"When?" she asked.

"Tomorrow."

"Tell me about it, Barry."

"Well, Lew Jensen is through with Epic Features! Jacob Conlee fired him!"

"Gee, don't keep me in suspense, dear, tell me everything!"

* * *

"WELL, you know how Lew Jensen has been talking about wanting a thousand a week more or he'd go over to Art-Craft? Sure. Well, we finished 'Hearts Aflame,' and today everybody congregated in the projection room for the studio preview. President Conlee and Lew Jensen were there in the front row. Bill Yates, Gloria Udel and Mary Hawes, the three leads, were there.

"Everybody who had anything to do with the picture was there, including some writers from the press and fan magazines. The picture came on, and from the very first minute the audience started laughing. The photography was excellent, the sound recording perfect and the actors in fine fettle. The picture was a panic.

"When the final fade-out came, however, the picture did not die away. Instead, two new figures appeared on the screen. One was Lew Jensen, the other one was I—and this is what happened:

"I stuck out my hand to Lew, 'You did great work in this picture,' I said from the screen.

"'Hub!' Lew grunted, and his chest stuck out 'til the buttons nearly popped off. 'Yeah, if it wasn't for me this picture would have been an awful flop. I'm good. And if I don't get that thousand dollar raise. I'm going over to Art-Craft and let Jake Conlee and his whole lousy outfit go to blazes!'

"'What's that?' I yelled from the screen—and baby, you should've seen the frown I pulled!

"Suddenly there was a commotion in the audience. Lew leaped to his feet and sent a wild yell toward the projection room. 'Cut!' he howled. 'This picture is finished. Let's have the lights!'

"The man at the projection machine didn't hear; or, if he did, he paid no heed. On the screen I was saying rebukingly: "'It looks to me that Mr. Conlee is a genius, Lew, and you should be glad to be on his pay roll.'

"Lew's face registered fury as he answered: 'Oh, you give me a pain in my chiropractic column, Barry. It's my brains and acting that has put Epic Features over ever since the movies learned to talk—not Jake Conlee!'

"The audience began to snicker. Lew Jensen was squirming like a man sitting on a hot stove. 'Cut!' he yelled again, his voice choking with mortification. 'Mr. Conlee, please, there's some awful mistake here!'

"'Keep quiet,' Conlee said. 'I want to hear all of this.'

"Lew was beginning to edge toward the door when my answer came from the screen: 'Lew, you're either drunk or crazy, to talk about Mr. Conlee like this. Why, he's the finest'

"'Hooey—hokum!' Lew hollered from the screen. 'He's a big fat-headed dumb-bell! If Jake Conlee and a cabbage-head had a thinking contest, Conlee would come out second!'

"A few more lines and the scene ended. The light came on. Down in front Mr. Conlee was staring malevolently at the quivering, cowering figure of Lew Jensen—the man to whom he so nearly had given a new three-year contract.

"Lew took one look at Conlee's face. He realized the hopelessness of arguing or explaining. The evidence against him was incontrovertible. Conlee had seen and heard. But he was dignified. He merely reached into his pocket and drew forth the unsigned contract, tore it into tiny pieces, and threw the pieces at the feet of Lew Jensen. Then Conlee got up and walked out."

* * *

"WELL, my lands!" Betty exclaimed, and threw her arms around Barry Bardelly, kissing him joyfully. "How did it all happen?"

"Easy, baby, easy," Barry replied, giving her a big hug. "I knew that Lew wasn't on the square, so I trapped him the other day. Jimmy Doyle, the head cameraman, was in on the deal. When we finished a scene and the director had said 'cut,' Jimmy just let the motors and the recording machines run. That also kept the cameras turning over; but Lew didn't know it. The mikes were open too, so everything we said and did was photographed and recorded. Yesterday when we finished shooting and they started to cut and assemble the rushes, Jimmy Doyle and I just tacked that little scene on to the end.

"This evening, Mr. Conlee called me into the office and told me that I was to take Lew's place in the new picture 'LOVE AND LIVE.' Tomorrow, I sign the contract for a starring role!"

An air of bliss prevailed the cozy apartment. Betty joyfully embraced Barry; the feeling was mutual.

"Gosh," she exclaimed, gasping for breath, "you hear of fellows getting the breaks—but you not only get them—you make them!"

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1222 GUARANTY BUILDING

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Progress in the Industry

(Continued from page 36)

by means of a beam splitter and is then caused by a system of rhomboids to form two images one-quarter normal size in opposite quarters of the frame on standard size film, one through an orange filter and the other through a blue-green filter. A twin lens projector with the appropriate filters over the lens superimposes the two positive images on the screen.

The Kodak camera exposes four pictures on each frame of 16 mm. film by a mechanism which introduces an alternate horizontal and vertical movement on a rear projector screen, the images being reflected from a shielded mirror onto the screen. McKay described methods of producing distortion effects by exposing motion pictures through ophthalmic prisms and an auxiliary lens.

A non-intermittent amateur projector employs a 12 sided prism in a cylindrical mount which revolves between the aperture and the objective.

A passenger airplane flying from Columbus, Ohio, to Los Angeles, was equipped to show motion pictures on 16 mm. film enroute. The projector was operated with dry cells and a daylight screen was used.

An unbreakable film was described which consisted of strips of 16 mm. film, $4\frac{3}{4}$ inches long, scaled between thin pieces of steel which had holes cut through for the pictures and the film perforations. These strips were projected by stacking them in a projector magazine where an electro-magnet picks up the top strip which is then moved intermittently past a horizontal aperture. A mirror deflects the image along a horizontal axis onto a translucent screen.

A recent survey made by the secretaries of the 32 Film Boards of Trade of the Motion Picture Producers and Distributors of America revealed that there were 22,624 motion picture theatres operating in the United States. About half the total number were wired for sound pictures. There were reported to be 57,743 theatres in the world as shown by a census taken by the Motion Picture Division of the U. S. Department of Commerce. With the increased total for the United States shown in the Board of Trade report, the world total would be 59,867.

It was estimated that a half billion dollars were invested in sound motion picture development during 1928 and 1929. Exports of film increased in 1929 over 1928, 282,000,000 feet being shipped out in 1929 as compared with 222,000,000 feet in 1928.

Pictures made in studios of American companies represent 85 per cent of all film entertainment, although United States producers make less than half of the world's feature product. The yearly pay-roll of Hollywood producers reaches \$100,000,000, averaging \$2,000,000 weekly.

Valuable summaries of development in the motion picture industry were published during 1929 in the Encyclopedia Britannica. The subjects treated and the authors were as follows: History—T. Ramsay; Production—J. L. Lasky; Sets—C. Gibbons; Acting—M. Sills; Direction—C. B. de Mille; Make-up—L. Chaney; Technology—C. E. K. Mees.

A section of the 1930 Supplement of the New International Encyclopedia deals with motion pictures and was prepared by R. Watts. In the article on Photography in this same publication, G. E. Matthews reviews the growth of motion pictures from 1914 to 1929.

New publications were the Journal of the Society of Motion Picture Engineers, Journal of the Acoustical Society of America, Projection Engineering Electronics, and Cinematography.

A partial list of the new books is as follows:

1. *Technical Digest, Academy Motion Picture Arts and Sciences, Hollywood, Calif., 1930.* A compilation of published lectures given as part of a School on Sound Fundamentals.
2. *Year Book of Motion Pictures.* Film Daily, N. Y., 1930, 12th Edition.
3. *Kinematograph Year Book,* Kinematograph Publications, Ltd., London, 1930.
4. *Encyclopedia on Sound Motion Pictures,* Cameron Publishing Co., Manhattan Beach, Brooklyn, N. Y., 1930.
5. *Photographic Emulsions,* by E. J. Wall, American Photographic Publishing Co., Boston, Mass., 1929.
6. *See and Hear,* by W. Hays, Mot. Pict. Producers and Distributors of America, Inc., New York, 1930, 63 pages.

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7. *On Film Technique,* by V. I. Pudovkin. Trans. from Russian by I. Montagu, Gollancz, Ltd., London, 1930, 204 pages.

8. *Sound Projection,* by R. Miehlung, Mancall Publishing Co., New York, 1929, 528 pages.

9. *Photo-electric Cells,* by N. R. Campbell and Dorothy Ritchie, I. Pitman & Sons, N. Y., 1929.

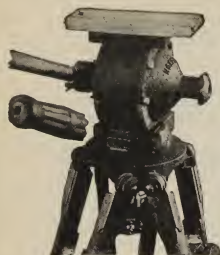
10. *Sound Pictures and Trouble Shooters' Manual,* J. R. Cameron and J. F. Rider, Cameron Publishing Co., Brooklyn, N. Y., 1930.

11. *Electric Transmission of Pictures and the Telehor (Das Elektrische Fernsehen und das Telehor)* D. von Mihaly, M. Krayn, Berlin, 1926, 196 pages.

12. *Television,* H. H. Sheldon and E. N. Griesewood, D. Van Nostrand Co., N. Y., 1929, 194 pages.

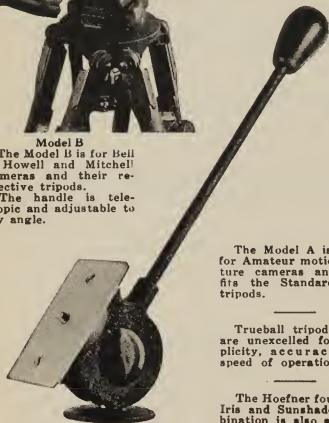
13. *Radio Movies, Radiovision, Television,* C. F. Jenkins, National Capital Press, Inc., Washington, D. C., 1929, 143 pages.

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Amateur Movie Making

(Continued from page 28)

more, large banks of snow have the same effect as large bodies of water, and reflect additional light into the lens. After snow or rain storms, when the air is unusually free from dust, the exposure should further be reduced. Where distant scenes are attempted, panchromatic film and filters are imperative. In fact, panchromatic film is advisable for all scenic cinematography, as it improves the color-rendition tremendously, making a far better picture.

When traveling, always do your best to protect the camera and lenses from dust, and, before shooting, be sure that the camera—especially the film-channel—is free from dust and grit, and that the lens and filters are clean. For this purpose it is always wise to carry a small camel's-hair brush, and a supply of lens-tissue.

As vacation films rarely permit retakes, it is well to safeguard yourself by the use of an accurate exposure-meter, and a firm, substantial tripod.

Furthermore, before starting, determine whether or not you will want duplicates of your films. If you do, use Panchromatic negative film rather than reversal, for thus you can always be sure of prints of the first quality, and in any number. If you use reversal film, be sure to have your duplicate made before you start showing the film to your friends, for any scratches or other injuries done the original film will appear on the 'dupes', as well.

Lastly, remember that the most important accessory of an amateur or professional movie-maker is common-sense, and always try to use it as efficiently as you would use any other photographic accessory.

Advantages of Non-Intermittent Projection by the Revolving Lens When Mechanism

Abstract of paper by Arthur J. Holman, read at
S. M. P. E. Spring Meeting.

EXTENSIVE comparison tests, conducted by men thoroughly familiar with the performance of intermittent projectors, have proven conclusively that the revolving wheel projector easily produces screen images which are fully the equal of the best present day presentations as regards definition, steadiness and brilliancy. In other words this system of projection, as embodied in a mechanism designed and constructed some four or five years ago, meets the most exact requirements of critical definition, steadiness and screen brilliancy.

The advantages of the revolving lens wheel system of projection reside in the elimination of the intermittent movement and the shutter. The uninterrupted flow of uniform and relatively low intensity light to the screen produces a clear, bright and extremely pleasing quality of picture, entirely free from scintillating effect in the highlights. Due to the continual dissolving action, which occurs between successive film frames, the appearance of graininess is greatly reduced and the action is smoothed out. These factors materially reduce eye-strain and fatigue, thus enabling the observer to enjoy to the fullest extent the improved tone qualities. The screen results produced with this system have been likened to paintings of old masters.

Elimination of the intermittent movement and the introduction of a scientifically designed take-up control, reduce film wear and damage to a minimum, making it possible to get several thousand exhibitions from a single print without accumulating scratches, oil and dirt over the picture area. Moreover, since the spot intensity is only half normal, the film strip is subject to very little heating effect. The aperture and gate design effectively prevent "buckling."

The optical system, easily and instantly adjustable for variation in shrinkage of film, is very simple: It contains no mirrors or prisms and does not require cams or other variable velocity devices for its operation. The system may be designed for any desired film frame size and is equally effective for 16 mm. or double width film. The model used at the S. M. P. E. Spring Meeting is equipped with improved safety devices including a fool-proof fire shutter and effective magazine valves.

The cinematography of the expedition which is attempting to scale Mt. Kangghengda, the second highest mountain in the world, is in the hands of the well-known French cinematographer, M. Duvanel.

The Cinematography of Brownian Movement With the Filmo Camera

An abstract of paper by R. Fawn Mitchell, read at S. M. P. E. Spring Meeting.

BROWNIAN Movement" is a characteristic of extremely small particles suspended in a solution. Therefore, to take motion pictures of the movement of these particles, a high magnification must be used. The higher the magnification used, the more the light that has to be concentrated on the object to permit taking motion pictures. Naturally, the higher the magnification, the less the depth of focus and the consequent difficulty of focusing. At the same time, a sufficiently high magnification has to be used to register the small particles on the film.

A series of tests was conducted, using both 16 mm. FILMO and 35 mm. EYEMO cameras in conjunction with different illuminations. Different magnifications were tried so as to provide a comprehensive comparison of the results obtained under different conditions.

Incandescent lights were found of insufficient power to permit motion pictures being taken at the magnifications used, so that arc lamps had to be employed. The tendency of the arc crater to move during operation, necessitated watching the subject while photographing. A Microphone, the essential of which is a split-beam prism passing 5% of the light and reflecting 95% of the light, was found very satisfactory. A Reflex Device, permitting a prism to slide in front of the camera aperture, was used to focus the very small particles which could not be seen through the Microphone. The eye-pieces of the Microphone and Reflex were adjusted so that after fine focusing was obtained in the Reflex, the focus could be checked in the Microphone while actually filming.

For extremely high magnifications, a combination of Therapeutic carbons and 16 mm. orthochromatic film was found best. For smaller magnifications, a combination of 16 mm. panchromatic film with thin core Sunshine carbons was found more satisfactory. A chart is given showing the spectral sensitivity of the panchromatic and orthochromatic films as compared to the spectral energy distribution of the two types of carbons.

The actual arrangement of the apparatus is shown and the sequence of adjustments are detailed very carefully, to assist others in duplicating the results with certainty. Cuts are shown, made of short strips taken from various scenes, and demonstrate the effectiveness of the method for taking motion pictures of such small objects. Blood cells of 1 or 3 microns diameter were enlarged so as to more than fill up a 16 mm. motion picture frame. Showing these pictures on a screen 8' x 10', gives a magnification of about 250,000.

Book Reviews

Tilney and Cameron Give Us Some Good Material

PERHAPS we are a bit delayed in commenting upon "The Principles of Photographic Pictorialism," by F. C. Tilney, F.R.P.S. However, one cannot give an honest opinion of a book unless he has read it; and to digest this remarkable book by Mr. Tilney is not a feat that one can perform over night.

Frankly, this book, published by the American Photographic Publishing Company of Boston, is one of the most worthwhile volumes that has come to the hand of the writer in years. Mr. Tilney has done a really great piece of intelligent work in preparing this book, and we unhesitatingly recommend it to all who are interested in photography and pictorial beauty. It is a book written in scholarly fashion and contains a wealth of excellent material which is invaluable to any pictorialist.

JAMES CAMERON has given the picture industry another excellent book in his "Sound Pictures and Trouble Shooter's Manual." This volume of 1200 pages and 500 illustrations is well worth anyone's study who is interested in sound, whether in the theatre or the studio. Mr. Cameron, as usual, has gone about his task in painstaking fashion and has turned out a book that should be in the library of everyone connected with the technical side of pictures. He has also brought out an "Encyclopedia on Sound Motion Pictures" which is equally valuable.—*Hal Hall.*

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The above picture, made on 16MM film with 1/32 second exposure at F:3.5, shows what one Little Sunny Twin will do. The lamp was 10 feet back from the subject and no other illumination was available.

Little Sunny Twin is the only lamp at its price that delivers a full 90° angle of evenly intense light sufficiently fast for F:3.5 movies. Operates on 110 volt A. C. or D. C. Semi-automatic. Draws only 15 amps. Try it 10 days. Money back instantly if you are not satisfied. Order now and get valuable book of instructions on "Interior Movie Lighting" free of charge.

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Your Makeup Problems



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Dear Mr. Factor:

Question: I am having great difficulty in making my rouge look like a natural color. Is there any set rule for applying it?

M. G., Denver, Colo.

Answer: Rouge in any woman's hand can be compared to the brush in the artist's fingers. Incorrectly applied, it will mar the most perfect features. Rouge should be applied by putting a very small amount on the cheek bone, or on the highest point on the cheek; then blend with the fingers to the fullest part of the face—stopping at the hollows. Blend the rouge at the edges so that no line of demarcation shows. This will give you a natural appearance.

Dear Mr. Factor:

Question: Should I use the same shade of powder in the evening that I do in the daytime?

E. L., Wichita, Kansas.

Answer: Evening make-up should be a little lighter and brighter than daytime make-up. Use a shade brighter rouge at night—it will give you the same natural and healthful coloring that you have in the daytime. Be sure to follow out the color harmony scale according to your type.

Dear Mr. Factor:

Question: My hair is very dull and looks lifeless. What can I do to overcome this?

MABEL M., New York, N. Y.

Answer: Use a little brillianine each morning. This will brighten your hair and give it more life.

Dear Mr. Factor:

Question: I have a very pale complexion—almost what would be called ghastly, and rouge does not look natural on me. What shade should I use?

Answer: From the meager description you have given, I believe Blondeen is the shade for you, providing you are blonde. If you have dark hair, use Naturelle Rouge. Care must be taken to use shades that are not too vivid, when you have very little natural color. The softer shades, both in powder and rouge, will harmonize better with your type and will not produce such a marked contrast.

Dear Mr. Factor:

Question: My neck and arms are very tanned. What can I do to make them appear well when wearing an evening gown?

DORIS S., Louisville, Ky.

Answer: Use Liquid Whitener. This comes in various shades to harmonize with your general make-up. Use a shade lighter than your Face Powder.

Dear Mr. Factor:

Do you consider Eyeshadow necessary to a complete make-up? I have never used it—can it be obtained in various shades, and what is the object of its use?

K. C., Dayton, Ohio.

Answer: Eyeshadow plays an important part in a make-up. It can be obtained in shades to match the eyes. Its purpose is to make the eyes appear larger and give them an added brilliancy.

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Saving Films

THE National Library of Austria has created a "Cine-matèque," in which will be conserved copies of the most important films judged from an artistic and documentary point of view. Already 15,000 photographs and 500 films placards have been catalogued and stored. The principal object in view is to prevent the loss of such films after a short period of projection in the cinemas.

New India Firms

THE increasing popularity of "home-grown" films in India is indicated by the registration of more and more companies. The following have recently been formed:

Bright Star Films, Limited. Director P. C. Das Gupta. To produce. Capital, 2 laks of rupees (about £30,000).
Films of the East, Limited, Calcutta. Director, Captain S. C. Shaw. To produce. Capital, 10 lakhs (£150,000).
Indian Cinephonographs, Limited, Poona. Directors, Richards and Dheer. Capital, 10 lakhs.
Pathe India Theatres, Limited, Bombay. Directors, Alexander Hague. To own theatres. Capital, 1 lakhs.

• INDEX TO ADVERTISERS •

Bass Camera Co.	30
Bell & Howell Co.	1 and 29
Brulatour, Inc., J. E.	21
Cinema Patents Company, Inc.	6
Cinematographic Annual	23
Composite Laboratories	27
Davidge, Roy	37
Drem Products Corp.	34
Dunning Process Co.	39
DuPont Pathe Film Mfg. Co.	Inside Front Cover
Dyer, Elmer C.	26 and 46
Eastman Kodak Co.	Inside Back Cover
Factor, Max	25
Goerz American Optical Co., C. P.	41
Hoefner, Fred.	40
Hollywood Magazine	42
Hollywood Film Enterprises, Inc.	35
Holmes Laboratory, Burton	42
Jackman, Dr. G. Floyd	46
Kleena-Film Corp.	35
Lockwood, J. R.	42
Mitchell Camera Corp.	Back Cover and 34
Mole-Richardson, Inc.	2
Multicolor Films, Inc.	24
National Carbon Co.	7
National Film Publicity Corp.	45
National Lamp Works of General Electric Co.	5
New York Institute of Photography	35
Perry, Harry	46
Priester, Harvey W.	46
Scheibe, George H.	37
Smith & Aller, Inc.	Inside Front Cover
Superior Engraving Co.	26
Tanar Corporation	4
Van Rossem, W. J.	46
Zeiss, Inc., Carl	43

Warner's Camera Blimp

(Continued from page 22)

is fitted into a metal sleeve integral with the "Blimp's" frame. This port-hole is therefore adjustable, and quickly and completely removable. On it may be mounted the various filters, gauges, mattes, etc., normally used in silent cinematography, and these may be adjusted with relation to the lens exactly as in former days; the customary sunshades, etc., may be mounted in front of them, leaving this whole vital assembly on the outside of the "Blimp," and instantly accessible. For use with extreme short-focus lenses, the port-hole assembly may be reversed, bringing the glass, gauges, etc., quite as close to the lens as is possible with the ordinary matte-box assembly, and leaving a clear field for the lens' wide angle.

Since the complete "Blimp" is so light, and since it gives such freedom to the cinematographer and sound-man alike, it is easy to see why the Warner-First National technical staffs are so enthusiastic about them, and knowing that enthusiasm, the industry as a whole can count it a stroke of great good fortune that these new devices are to be made generally available.

Shooting an Eclipse

(Continued from page 9)

point of making a much wider use of movie facilities in our scientific work."

The scientific expedition was made possible by the co-operation of the American Society of Cinematographers, Fox Film studio, Hearst-Fox Movietone, and Daniel B. Clark, who provided the automobile that carried the party over 2000 miles of California and Nevada highways, twice across the high Sierras and through 29 counties of the state.

Professional Amateurs

(Continued from page 33)

at the Pathe Studio. Ever since I've had the *Filmo* I've taken it on location trips with me, and sometimes to the studio, as well. That way, I've been able to preserve a lot of those enjoyable moments between scenes, which otherwise would become just pleasant memories. And we've all had so much fun doing it! In those long waits between scenes, we've made little scenes of our own, and whenever I showed up with the camera it's been, "Well, Mary, what do you want me to do today?" and, "Hello, Miss Cameraman. Have you anything for me in this scene?"

"But when I started this last picture, *Holiday*, I found it so interesting, and everyone so willing to help, that I grew bolder, and brought the camera out nearly every day, and set it up beside the studio cameras. At first I thought I could only get the scenes that I didn't play in, but one of the assistant cameramen volunteered to be my assistant, too. So after that I'd led him shoot the scenes I played in, just as I shot the others. In one sequence—a big Cathedral wedding-scene, I stayed in place just as long as I could, shooting myself, and only passed the *Filmo* over to him in time to run madly over to where I was supposed to make a dignified entrance!

"And everyone has been so kind and helpful to me! The cameramen have helped me with my exposures, and compositions. The sound men have been amazingly considerate, too. They tell me it's lucky that my *Filmo* is so quiet, for it's enabled me to get much closer shots than I'd dared to hope for. And—well, everyone in the company has been lovely about it. Just the other day I was getting ready to shoot a scene, and suddenly, to my amazement, one of the carpenters came up and began to set a 'gobo' beside me, to shield my lens from the glare of some lights. A few minutes later, the assistant director saw that the 'extras' were blocking my field of view as they entered and left the set, so he came over and rearranged them so that I, too, could get my picture. But these are only a few of the kind things everyone did for me all through the picture—things entirely apart from their regular work, and which made things so much pleasanter and happier for me. And they did it all with a wonderful, friendly spirit that made me proud to be a fellow-worker of such fine people."

Kindly Mention The American Cinematographer When Writing to Advertisers

Tendencies in the Cinema

(Continued from page 14)

non-sequential logic. It has accepted the compound as fiscal salvation and as palpable technology. But the compound is an art, technology informed by philosophy. The philosophy, critical viewpoint, is absent. Russia alone is completely the land of the philosophic cinema; therefore we may hope for much from its compoundings. If the technology of the Russian film keeps up with its philosophy, a very great compound cinema will result.

The famous Art-director, Boris Bilinsky, recently exhibited a series of sketches for costumes and sets made for a dozen French films, among which were *Casanova*, *Scheherazade*, *Monte-Cristo*, *The White Devil*, and *Tarakanova*, at the Galerie de France, in Paris.



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| 0407 | "YELLOWSTONE PARK"
Nature's greatest wonderland in sound. | 0408 | "AN EVENING AT HOME"
Featuring Jack and Patricia, famous radio entertainers. |
| 0509 | "GORDON STRING ENSEMBLE"
A musical trio featuring Miss Edith Gordon. | 0510 | "TWINKIE TOWN TALES"
An amusing fairy tale in cartoon and sound effects. |
| 0511 | "DARKTOWN REVUE"
An all-colored revue with an all-colored Dixie orchestra. | 0512 | "GIVE AND TAKE"
Featuring Tony Kabooch, radio's favorite entertainer. |

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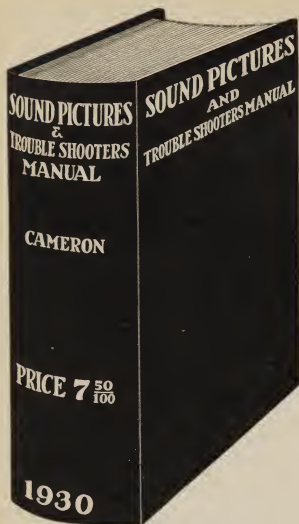
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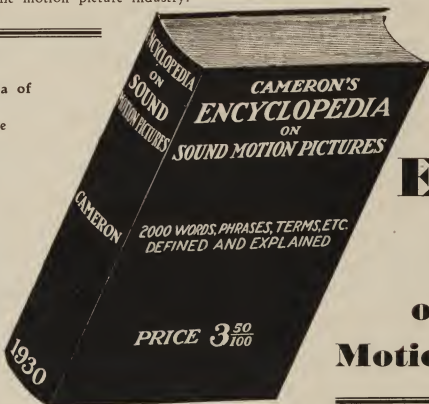
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